

MODERN HOSPITAL

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No. 5

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The Strongest Man in the World

is only a baby when he lies on his back in a hospital waiting for nurses, and doctors, and Nature, to restore him to health and strength. Strength can come from only one source—a nourishing, digestible food. When there is inability to take ordinary nourishment, it has been found that the following Shredded Wheat gruel will be digested by the most delicate stomach:

> Cook one Shredded Wheat Biscuit in milk until it has the consistency of gravy; then strain through fine cheesecloth, pressing all that will come through. This gruel that comes through the cheese cloth, seasoned to taste and served when needed, either with or without milk, is the very life of the wheat grain, and supplies nutriment when all other foods fail.

This Shredded Wheat gruel has saved the lives of thousands of babies. It will therefore save the lives of adults with baby stomachs.



"IT'S ALL IN THE SHREDS"

Made only by

The Shredded Wheat Company Niagara Falls, N. Y.



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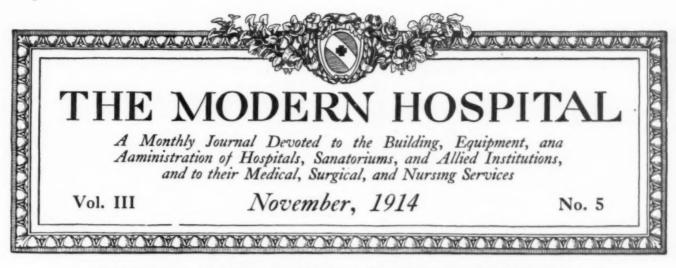
EFFICIENCY in the Kitchen

It pays to buy hospital cooking appliances from a manufacturer who understands requirements. Our experience entitles us to be classed as specialists in kitchen outfitting. Write us about your problems. Catalogs, plans, and suggestions free. Numerous institution references.

THE BORN STEEL RANGE COMPANY

2163 East 9th Street

CLEVELAND, OHIO



AN INSURANCE COMPANY SEEKING TO IMPROVE INDIVIDUAL AND PUBLIC HEALTH.

Visiting Nursing Service—Publication of Health Literature—Health Campaigns Supported
—Education by Exhibits—"Health and Happiness League" Inaugurated—
Home Building Financed—Looking for Farther Fields.

BY LEE K. FRANKEL.

SIXTH VICE-PRESIDENT METROPOLITAN LIFE INSURANCE COMPANY.

REALIZING that an army of 13,000 agents calling on 10,000,000 policyholders weekly could be of great assistance in promoting individual and public health, the Metropolitan Life Insurance Company began its campaign of education in 1908. Since that time the Welfare Department of the company has grown rapidly, and its activities today cover almost all cities and towns in the United States and Canada.

The efforts of the company have been threefold: first, the improvement of individual health through educational leaflets and pamphlets distributed by the agents; second, a visiting nurse service to its industrial policyholders; third, the improvement of general health conditions through cooperation with health officers in clean-up, flyswatting, and other campaigns, through assisting them in enforcing housing ordinances, and by the enlistment of public support for general and special health movements.

VISITING NURSE SERVICE.

The visiting nurse service today covers over 1,700 cities and towns in the United States and Canada. The figures of this service on December 1, 1913, for the year ending November 30 were as follows:

N	umber of cities and towns in which the nursing
	service was installed November 30
Ti	crease
N	umber of patients under care of nurses175,757
N	umber of visits made
C	ost of nurses' visits\$525,488.71
C	ost per visit\$0.46
N	umber of visits per patient6.4

The total cost of the visiting nurse service in 1913 was \$553,166.02. It is estimated that this service covers 9,000,000 people.

The company affiliates, wherever possible, with existing agencies in the various cities and towns. A large percentage of the nursing is in the hands of organized visiting nurse societies. In some cases the cooperation of hospitals has been sought, and in these instances the hospital gives visiting nurse service for the policyholders. Where it has been impossible to effect affiliation with existing agencies, the company has employed its own nurses.

During the last year efforts have been made to improve the character of the service. At the home office careful study is made of the work done by individual nurses to determine whether they are competent. In addition to the home office supervision, field supervisors are employed. These field supervisors, traveling from town to town, go with the nurse on her visits and seek to improve her service by encouragement and by example. The purpose of the company and its attitude are explained. A powerful *esprit de corps* is being developed.

PUBLICATIONS.

In addition to the education given to sick policyholders by the visiting nurse, the company seeks to educate in matters of health by means of leaflets and pamphlets. These are written in very simple language, and are published in various foreign languages as well as in English. A large



Fig. 1. How long shall we eat together? (After the State Board of Health, North Carolina.) (Six hundred thousand of these circulars in English and French were issued.)

number of these pamphlets have been circulated, as can be seen by the following figures:

"Fake Consumption Cures"	500,000
"A War Upon Consumption"over	5,000,000
"A War Upon Consumption"over "Directions for Living and Sleeping in the Open	-,,
Air"	200,000
"The Child" (English)	1,750,000
"The Child" (Foreign)	650,000
"Teeth, Tonsils, and Adenoids" (English)	2,000,000
"Teeth, Tonsils, and Adenoids" (Foreign)	500,000
"The Health of the Worker" (English)	1,000,000
"The Health of the Worker" (English) "The Health of the Worker" (French)	100,000
"Smallpox and Its Prevention" (English)	500,000
"Smallpox and Its Prevention" (French)	100,000
"Typhoid Fever and How to Prevent It"	100,000
(English)	500,000
"Typhoid Fever and How to Prevent It"	500,000
(French)	100,000
"A Magic Book of Health Rules" (for Health	100,000
and Happiness League Members only)	90,000
"Welfare Work Conducted for Policyholders"	300,000
"Welfare Work Among Employees"	100,000
"Visiting Nurse Service"	300,000
"Some Facts About Scarlet Fever"	500,000
Pohn Cincular	5,000,000
Baby Circular	5,000,000
"From Flies and Filth and Fever to Food" (cir-	E00 000
cular)	500,000
"A Day in the Life of a Fly" (circular)	5,000,000
"Dirty and Clean Milk" (circular)	5,000,000
"If You Had Consumption" (circular)	500,000
Shack circular	200,000
Health campaign circular	1,250,000
City clean-up campaign circular	1,250,000
Folding cups	1,100,000
Paper drinking cups1	2,000,000
	*

The following new publications have just been published, or are at present being prepared and are now on the press: "First Aid in the Home," by Major Charles Lynch, of the Medical Corps of the United States Army; "All About Milk," by Dr. Milton J. Rosenau, professor of preventive medicine at Harvard University; "Help and Hints for Tuberculosis Patients."

HEALTH CAMPAIGNS.

Cooperation with health authorities has been sought and has been effected in many instances.

Although final figures for the present year are not yet obtainable, the company cooperated in over 140 cities by the distribution of literature and by urging policyholders to enter into clean-up campaigns. In many instances the planning of such campaigns was suggested to the health officers by the company's superintendents.

Through cooperation with certain welfare organizations, health bureaus, etc., special circulars have been prepared and distributed among our policyholders. In the city of St. Louis there were distributed 100,000 copies of a specially prepared circular in order to bring home forcibly to policyholders the merits of the new tenement house law. The tenants' rights under the law were especially emphasized in this circular. Of the violations of the tenement house law reported to the Department of Health, a large number were the result of the distribution of the company's circulars.

Plans are at present being completed for still further cooperation with health officers. Letters have been sent to health officers in cities having a population of 20,000 and over, offering the services of our agents in the distribution of literature to policyholders in any campaign conducted for the improvement of the health conditions in their respective communities. We are confident that through the machinery of the company and through its contractual relations with our policyholders, which permit our agents to enter the homes of our policyholders weekly, we can be of great service to health officers in educating the masses of their citizens in the health programs which they may have under way. Our offer of assistance has recommended itself to health officers, and the company has been fortunate in having been able to cooperate, in addition to the above, in campaigns for increased facilities for



Fig. 2. A, consumptive spitting on floor; flies feeding on it, carry the germs of the disease to food. B, the spit dries and careless sweeping, dusting, or draught cause the germs to float in the air. C, the germs may enter the bodies of children, playing on the floor, through sores or wounds.

contagious disease hospitals, for new tuberculosis sanatoriums, and for the enforcement of health ordinances.

In cooperation with the National Association for the Study and Prevention of Tuberculosis, the

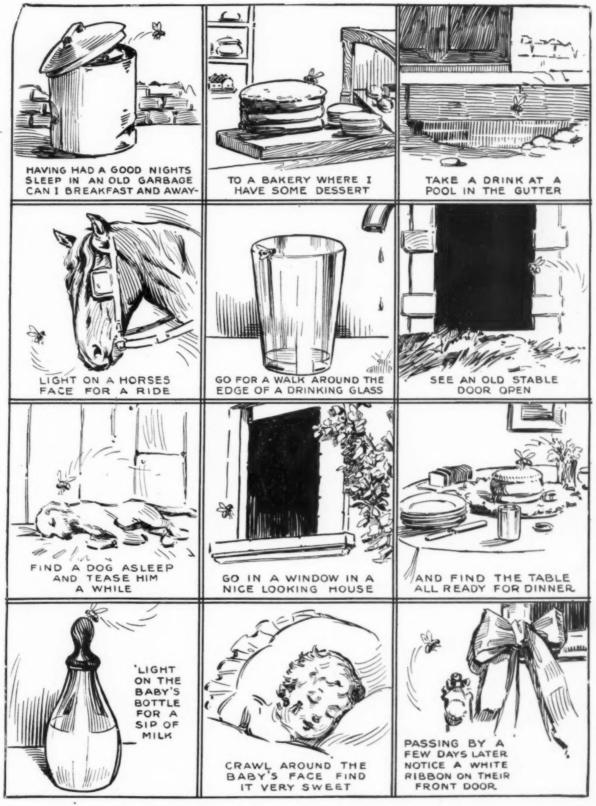


Fig. 3. A day in the life of a fly. (Five million of these circulars were issued.)

company printed 350,000 copies of a circular entitled, "If You Had Consumption, What Would association had written, advising them that the You Do?" for distribution in the churches in the circulars could be obtained from us. A large num-United States on Tuberculosis Day, December 7, 1913. Requests for these came from various moving picture theaters in connection with films tuberculosis associations throughout the United shown on the subject.

States and from ministers to whom the national ber of these circulars were also distributed in



Fig. 4. Views showing instances of dirty milk (on the left) and clean milk (on the right). (Five million of these circulars were issued.)

EDUCATION BY EXHIBITS.

The company holds exhibits at county fairs and a number of special exhibits in large cities. In 1913 the total number of exhibits held was nearly one hundred. Printed welfare charts have been distributed to about one hundred district superintendents, who have exhibited them in store windows and school buildings, at local exhibits, etc. Our correspondence shows that these charts have

been very favorably received. They are neat in appearance and inexpensive in construction, yet serve a very useful purpose in acquainting the public with the welfare work of the company on a large scale. It is our purpose to supply each of the superintendents with at least four charts during the next few months, to be kept permanently at the district offices for use on various occasions, such as county fairs, local exhibitions, etc.

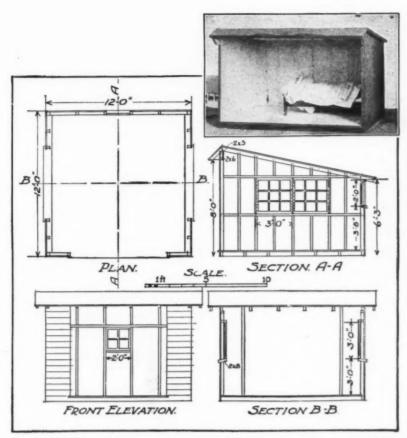


Fig. 5. Living and sleeping in the open air. Front view, floor plan, and elevations of a shack for flat roofs.

HEALTH AND HAPPINESS LEAGUE.

During the past months an experiment has been made in certain cities and towns in New Jersey to determine the effect of extension work to organize our boy and girl policyholders. In each community the children have been brought together in our offices and a juvenile municipality has been formed. The officers and members of the juvenile municipality cooperate with the various city officials in reporting violations of city ordinances, in

keeping the streets clean, and in such other civic duties as can be undertaken by the boys and girls. In each municipality the boys and girls have been offered the opportunity of joining hiking clubs, the Boy Scouts, the Camp Fire Girls, nursing clubs, etc. The last-named in particular, conducted by our nurses in their respective towns, have been especially helpful in educating the girls in the rudiments of home nursing and in the preparation of food for the sick. The results thus far obtained justify an extension of the experiment to other cities and towns.

HOME BUILDING.

In addition to these efforts for improving public health, the company has begun an experiment to secure for workingmen inexpensive but good houses. The experiment which

was begun in 1911, under which the company loaned approximately \$650,-000 for the erection of small homes in the Borough of Brooklyn, was extended during the past year through a loan, amounting to \$86,000, made to the Goodyear Tire and Rubber Company for the erection of homes at Goodyear Heights, a suburb of Akron, Ohio. The plan differs from the Brooklyn plan in a number of respects. The company requires no initial payment, and charges its workmen for whom the houses have been erected 25 percent above the actual cost price. The 25 percent, plus accumulated interest, is repaid to the employee at the end of five years, so that at the end of fifteen years he is the owner of his home and has obtained it at cost.

WHAT DO THESE EFFORTS MEAN TO THE HOSPITAL WORKER?

How do these efforts of the Metropolitan Life Insurance Company to secure improved health conditions in the various communities and to free the lives of policyholders from unnecessary sickness react on workers in the hospital field? It

means that if these efforts, covering, as they do, almost one out of every ten persons in the United States and Canada, succeed in preaching the lessons of good health, the strain which in the past has been put on all general hospitals should be relieved. It should be possible for them to devote more of their time and energy to the treatment of special infections and an ever-increasing portion of their energy to laboratory research looking toward the elimination of disease. It



Fig. 6. Granite worker using a sand blast—one of the conditions likely to cause tuberculosis. (One million one hundred thousand of these circulars in English and French were issued.)



Fig. 7. Three children brought with their mother, who had smallpox, to detention hospital. The center child was unvaccinated; the other two were vaccinated a year before and remained perfectly well. (Six hundred thousand of these circulars in English and French were issued.)

should mean, moreover, that the hospital would not only be relieved of the large number of individual cases, but that those cases requiring hospital care would receive this in the early stages of the disease, and in this way the number of chronic cases in hospital wards would be largely reduced.

With the assistance of the visiting nurse service and the emphasis of the pamphlets on prevention rather than cure, it does not seem an unobtainable end that all policyholders requiring hospital care will obtain this in the early and less dangerous period of their illnesses.

The Metropolitan Life Insurance Company does not feel that it has as yet availed itself of all of its possibilities. It seeks to be of assistance whenever and wherever it can. It calls on physicians and hospital workers throughout the country to suggest to it new lines and new developments to which it may devote its energy.

HOSPITAL RECORDS.¹

Accuracy and Completeness Absolutely Necessary—Must Be Made by Responsible Persons—Fire Protection Must Be Considered in Storing—Dampness Tends to Disintegration—Typewritten Records Are Best.

BY JOSEPH B. HOWLAND,

ASSISTANT ADMINISTRATOR MASSACHUSETTS GENERAL HOSPITAL.

IT IS not the object of this paper to describe a complete system of keeping hospital records. Articles by Myers² and Hollings³ deal fully with the system at present in use at the Massachusetts General Hospital. The following is intended to bring out some practical points in the handling of hospital records which the writer hopes may be of interest to the members of the association.

No hospital administrator can be said to have done his full duty unless he has endeavored to see that the clinical records made during his superintendency fulfill certain requirements—namely:

- 1. That no incomplete record be filed.
- 2. That the form of record be one possible to keep intact, yet available for frequent reference.
- 3. That the paper, ink, and binding be of such quality that the records may be durable.
- 4. That safe and suitable storage may be provided so that records will be protected from fires, loss by theft or carelessness, and from disintegration.

¹Read at the sixteenth annual conference of the American Hospital Association, St. Paul, August 25-28, 1914.

²Care of Hospital Records According to the Method of the Massachusetts General Hospital, Boston, Mass., by Mrs. Grace W. Myers; International Hospital Record, 1911.

³Record Keeping at the Massachusetts General Hospital, by Byam Hollings, M. D.; The Modern Hospital, February, 1914, Vol. II, No. 2.

No hospital record is complete unless every effort is made to incorporate into it data which will allow one to follow up the patient after he has left the hospital, for in these days, when hospitals are being tested for their efficiency, it is not enough to call the record complete when the patient is discharged. He must be followed up for one or more years to ascertain if the diagnosis was correct or the treatment successful. In the ordinary charity hospital admitting a foreign population, which is difficult to trace, the utmost care is needed to obtain the correct, complete name and address of the patient, of one or more relatives or friends (remembering that it will be much easier to trace a person who is in business for himself than a laborer, mechanic, etc., who may be constantly changing residence), and the name and address of the physician referring the patient to the hospital. Since care has been given to these details at the Massachusetts General Hospital, we find that we can trace a much larger proportion of our patients after one or more years. At present we reach an average of 70 percent in looking up groups of cases. We do not stop tracing a patient if we fail to locate him through relative. friend, or family physician. We use directories, write to postmasters and keepers of vital statistics, etc. It is expensive, but I think worth while. I wish here to give credit to Dr. E. A. Codman, formerly of the surgical staff of the Massachusetts General Hospital, for suggestions and funds to increase our efficiency in this direction.

The omission of an initial, age, or street number may be sufficient to render the tracing of a former patient impossible, and thereby limiting research work. The record of data I have mentioned must not be left to any one of several people in a hospital. It should always be done by someone who understands the importance of accuracy and who has been instructed in the proper procedure, and may be held responsible for inaccuracies. If the admitting officer is an assistant superintendent, his record should be considered as correct; if an admission blank is filled out by any other person, such as ambulance driver, orderly, clerk, etc., such blanks should be verified by some one employed for that purpose, and, when verified, stamped "correct." It is imperative that, after an admission blank is stamped "correct," it be considered the official record from which nurses must fill in charts, clerks enter data in the hospital register, and interns write patient's name in histories. I have seen a patient's admission slip filled out by a ward tender in the emergency ward, a chart sheet filled out by a nurse, and a history written by an intern all on the same case,

and no two of these records identical as to spelling of name or of residence given.

Provision is made that, if it can be shown that an error has been made by the clerk who corrects the admission blank, notice must be sent to the admitting office, so that all entries of the error may be corrected. As soon as the patient leaves the hospital, or on a given day of the week, all histories of discharged patients should be sent to the record room.

It is the duty of the librarian to read all records and note the following: that if an operation in a surgical case involves a right or left organ, this be stated; that a record of the suture material used in an operation be mentioned; that notes be complete up to the day of discharge.

In accident cases, record writers should not be allowed to give a lengthy statement of how the accident occurred, giving details of who was at fault, etc. That is a matter for the courts to decide if such cases come to trial later, as they frequently do. The wording of the history should not be a record of the slang of the day, nor should foolish or "smart" language be permitted. I have been ashamed more than once, when it was too late, to have records read in court where the patient could hear what was written. I have known of a record being refused admission to court where the house officer writing it had already tried the case. The best remedy for correcting these faults is to require such records to be rewritten. House officers do not like to write records any too well, and, if they are made to rewrite one or two such records, the practice becomes unpopular.

It is very desirable to have visiting physicians and surgeons go over each record before it is sent to the library for filing, if they can be induced to do it, but in my experience, while such may be the rule of the hospital, it is impossible to enforce it.

LOOSE LEAF OR BOUND RECORDS.

What system shall we use for filing records? I assume that the practice of writing clinical histories in bound books is no longer used. Having had experience with both loose leaf records in folders and loose leaf records finally bound, I do not hesitate to recommend the latter. In some hospitals, only one record of a patient is keptloose leaves in a folder, which permits additions to the record as occasion may arise, perhaps on several reentries into the hospital. I do not believe that loose leaf records can always be kept intact if they are used as much as they should be. At the Massachusetts General Hospital we do not permit a record to be taken from the library while in loose leaf form. There may be an advantage in having a patient's history filed in a single folder

in case of one or more reentries into the hospital, but in my opinion this slight advantage is much outweighed by the certainty of always having a complete record if bound. Here I may mention another point of importance, that of eliminating the common practice of gluing small papers into a volume of records—I refer to pathological reports, consultations, x-ray reports, etc. These should always be made on forms prepared for the purpose, of the same width as the regular history paper, and bound with the rest of the history. They need not be full-length sheets.

Let us consider the materials that are to make up our records. As I said at the beginning, it is our duty to make our records as nearly permanent as possible, and of course every superintendent wishes to do this in a way which, while effective, is as economical as possible. What we have to consider, then, are the quality of the paper, the permanence of the ink, and the proper binding.

To go back of the clinical history for a minute: I believe there should be in every hospital in bound form an entrance and discharge register kept in the admitting office, giving a few essential facts concerning all patients-namely, an entrance number, name, age, civil condition, address, admission diagnosis, to which service sent in hospital, address of nearest relative, and discharge diagnosis—and with this should be a bound index. These books are used continually, year after year, and should be made of the best linen ledger paper not less than 5.5/1000 of an inch thick. We have found paper of this quality and weight satisfactory to give the needed strength for hard use. The books should have the best binding, and be rebound promptly whenever the pages show signs of becoming loose. I wish here to add a word of caution: a hospital register should not be allowed to remain in a book bindery over night, as one cannot be sure that proper care is exercised to prevent loss by fire. The register and index are too valuable to take any unnecessary chances of losing.

To return to the clinical record: I have made quite a study of the matter of economy of record material. So far as I have been able to ascertain, there is no easy way to test paper and say that is 100 percent, 75 percent, or 50 percent rag stock (or sometimes so-called "linen"). Of course, we know that the rag papers are the durable ones. The cheap papers (sulphite process) made of wood pulp, are not durable. You are familiar with the appearance of a newspaper that has been exposed to sunlight for a few days, the deep yellow color it turns, and the faded appearance of its ink. This tendency of light to turn paper yellow

occurs somewhat in all paper, but least of all in the good qualities of "linen" paper.

For the large hospital, using a great quantity of paper. I think we should have competition in furnishing papers of all kinds. One cannot have successful competition unless different firms are allowed to submit papers of different brands, for in the paper trade some few printing companies have exclusive right to certain water-marks, and therefore we limit competition if we order by the water-mark. How, then, are we to judge qualities in competition? I believe it is fair to say that the stronger the paper is (of a given thickness), the better it is-i. e., the more rag is used to make it, the more durable it will be as a record. To test this, we use a machine made by the Ashcroft Paper Company, which measures the breaking strength of paper in pounds. Several tests should be made in each sample and the average noted. Now, as strength increases naturally with thickness, we must control these tests by noting the thickness. There are on the market many paper calipers which measure in 1/1000 of an inch. It is a simple matter, then, to make these tests. I have tested for strength and thickness papers which we have used successfully for clinical records, and I submit the following for your consideration:

For ordinary history sheets, a paper having a breaking strength of not less than 40-45 pounds and 4.5000 of an inch in thickness. For temperature charts, which are usually handled much more than the other sheets, a little heavier paper. We use for this purpose a paper 4.5000 of an inch thick and consider that its breaking strength should be not less than 50 pounds. It is a matter of considerable importance to use as thin paper as will answer our purpose, for all paper is sold by the pound, and unduly thick paper means bulky volumes, requiring additional wall space in our libraries, an important consideration if we are to have fireproof storage, which is expensive to provide.

Now, another point, concerning ink: What is the advantage of having good record paper if a poor, fading ink is used? In Massachusetts we have a state law which requires that all state, county, and city records shall be written with an ink specified by the commissioner of public records and supplied by the commonwealth. While I am not sure that the law would require us to use it at the Massachusetts General Hospital, a private corporation, we feel it our duty to do so, and for many years have used this ink. It is made by the Carter Ink Company. I believe any one who desires to use this ink can obtain it.

I have not spoken of typewritten records. The commonwealth of Massachusetts also specifies

what typewriting ribbons shall be used, having made tests of the permanence of typewriting inks as well as writing inks. Needless to say, we also use typewriter ribbons which are in this list.

As to proper bindings: For books much used, calf and pig skin covered volumes are best, but not recommended for hospital records, as leather which is not constantly handled and kept soft by the oils from our hands, soon dries up and goes to pieces. Buckram is the best binding, but expensive. Canvas has been found to be a satisfactory, moderate priced binding, and experience has shown it to be very durable.

Storing records: What conditions should we have for the best keeping of our records? It goes without saying that records should be safe-guarded against fire, and therefore a fireproof room is necessary. The best example we have of the keeping of records is that of the preservation of papyrus records in Egypt. The principal reason of the successful preservation of these records for thousands of years is probably the absence of moisture when they have been found. Therefore our cue is to have a dry place for our records. How many place old records in a more or less damp basement? You may say you use a fireproof yault. Has it air spaces in the walls,

and is it lined with metal as an additional measure to prevent its becoming damp?

Latterly, in some hospitals, clinical records are dictated to stenographers and by them typewritten. Is this a good method to follow? I believe the time will come when all busy hospitals will adopt this practice, and I know that at the Massachusetts General Hospital it is becoming more and more difficult for interns to find time to write records. The added work placed on them, such as the complicated tests to be made, added laboratory work, etc., has grown tremendously. Perhaps some of us trained years ago do not fully realize how much this means. It is proper for house officers, like the rest of us, to be kept busy, but they should not be overburdened with so much detail in record writing that they do not get sufficient time off to keep in good health. I am of the opinion that records written by anyone but exceptionally well-trained stenographers would have to be corrected. It is certain, however, that typewritten records are much more easily read. Headings stand out, and, if underscoring is used in suitable places, important parts of a history can be readily located. After being typewritten they should be read and initialed by the dictator, who may then be held responsible for their accuracy.

FIRST AID HOSPITALS IN COAL MINES.

Underground Facilities Make Possible Intelligent and Timely Treatment Immediately After Employees Are Hurt—Mine Hospitals Are Well Furnished, Electrically Lighted, Freely Ventilated, and Have Hot and Cold Water.

BY D. H. LAKE, M. D., CHIEF SURGEON KINGSTON COAL COMPANY, KINGSTON, PA.

THE establishment of mine hospitals in the an-1 thracite mines came about through the enactment of a law for that purpose in 1901. Section 1 of this law reads as follows: "Be it enacted . . . that within six months after the passage of this act it shall be unlawful to operate any anthracite mine employing ten men or more, in the state of Pennsylvania, unless said mine is provided with a sufficient quantity of linseed or olive oil, bandages, linen, splints, woolen and waterproof blankets. Said articles shall be stored in a room erected at a convenient place in the mine, which room shall not be less than 8x12 feet, and sufficiently furnished, lighted, clean, and ventilated, so that therein medical treatment may be given injured employees in case of emergency. The furnishings shall be sufficient to accommodate two or more persons in a reclining and sitting posture."

Section 2 of the law states that "it shall be the duty of the mine foreman or his assistants, in case of injury to any employee by explosion of gas or powder, or by any cause, while said miners are at work in said mines, to at once visit the scene of accident, see that the injured is carefully wrapped in woolen blankets and removed to the medical room and so treated with oils or other remedies as will add to the comfort and care of the patient. After being treated with all the skill known to the foreman or his assistants, the injured person shall be carefully wrapped up and sent to the surface, to be taken home in an ambulance or to the mining hospital, as may be desired, without expense to the injured party."

It is perhaps only just to state that prior to the enactment of this law some of the companies, notably the Delaware, Lackawanna & Western and the Delaware & Hudson companies, had established a system of first aid instruction, and it is likely that the value of such instruction later attracted the attention of the state Legislature, which in May, 1901, passed the law known as the Emergency Hospital Act, just fifteen months after



Fig. 1. Mine hospital, Kingston Coal Company, No. 4 colliery-Operating room.

the instruction of the mine foremen and their assistants of the Lackawanna company had been inaugurated in the Kingston district. From that time on the work has been gradually systematized until today all coal companies operating anthracite mines take an active interest in the work of rendering intelligent first aid to the injured.

While the law prescribes the size of the underground hospital, I have seen but one as small as the requirements. Many are from 8 to 12 feet high and 12 feet wide by 14 feet long. The floors are of cement, and the walls are either painted white or whitewashed. All are equipped with stretchers, tables, and chairs, hot and cold water, and most of them are electrically lighted. Large tin boxes, or cupboards, made into the solid wall contain the surgical dressings, splints, and medicines needed for the immediate care of the injured.

In addition to the maintenance of the mine hospital, most of the companies have installed mine rescue stations, fully equipped with oxygen helmets, such as the Draeger rescue apparatus and the pulmotor. After explosions in the mines, men trained in the use of these apparatuses enter a mine filled with noxious gases in quest of their fellow-workmen overcome by the vitiated air. Recent inventions have given us safety electric lamps

supplied from storage batteries, which are used in exploring gaseous places.

Throughout the anthracite region we have had recently the annual first aid contests among the various companies, in which from twenty to seventy first aid teams, each of five employees and a subject, participated. The teams are instructed by the company surgeons. The amount of good accomplished by these teams is simply wonderful.



Fig. 2. Mine hospital, Kingston Coal Company, No. 4 colliery.



Fig. 3. Mine hospital, Nottingham colliery, Plymouth, Pa.—One or more of this equipment is at every colliery.

The letters given below from Dr. J. M. Wainwright, surgeon-in-chief of the Moses Taylor Hospital at Scranton, whose beds are free for all the injured of the Delaware, Lackawanna & Western Coal Company, and from Dr. George W. Guthrie, of Wilkes-Barre, whose prominent connection with the American Medical Association for many years has given him a deserved national reputation, speak in no uncertain terms of the value of systematic first aid instruction.

The most complete mine hospital of which I have any knowledge is one recently equipped by the Kingston Coal Company at their No. 4 colliery, an illustration of which is here shown. Every convenience of the modern operating room is here found. This hospital room is on the surface, while the others shown are underground.

SCRANTON, PA., July 23, 1914.

Dr. D. H. Lake,

Kingston, Pa.

Dear Dr. Lake: Replying to your recent letter, I beg to state that we have in recent years noticed the greatest improvement in cases coming to the Moses Taylor Hospital after preliminary dressings in the mine hospitals or elsewhere at the hands of first aid teams. It is a matter that is hard to prove by statistics, but I feel quite certain that we are now able to save the lives of a considerable number of men every year because they have received proper first aid treatment at the scene of accident.

A similar improvement is also to be noted in injuries where life is not at stake. The men are now much more comfortable when they reach us, and infection of wounds and other complications are much less frequent than formerly.

I feel quite certain, aside from the humanitarian value of the work, it affords a great cash saving to the companies by making the results of accidents that do occur as slight as possible. J. M. WAINWRIGHT.

WILKES-BARRE, July 10, 1914.

Dr. D. H. Lake,

Kingston, Pa.

Dear Doctor Lake: My conclusions concerning the results of first aid rendered to injured persons admitted to the Wilkes-Barre City Hospital are these: Fractures are frequently found so well reduced that an x-ray examination justifies no disturbance; open wounds have sterile dressings applied, and infection is thereby prevented; bleeding vessels are well controlled by skillfully applied



Fig. 4. Mine hospital, Mineral Railroad and Mining Company, Cameron colliery, Shamokin, Pa.

tourniquet; burns are usually well treated, though one or more of the hospital attendants state that oily or greasy applications are not as good as dry picric acid dressings. Dr. A. J. MacRea, superintendent Wilkes-Barre City Hospital, the interns on duty, and the surgeons in charge justify these conclusions.

When I compare these results with those we had in olden times when injured men were brought in without any dressings at all, or those of the crudest character, when simple fractures became compound in transit, when men died of hemorrhage in the ambulance, when shock from untreated burns, scalds, and other injuries was greatly intensified, I am convinced that the instruction given in first aid is well worth the time, trouble, and cost of the undertaking.

GEORGE W. GUTHRIE.

FIRE PROTECTION AND FIRE DRILLS IN HOSPITALS.

Radical Defects in the Usual Escape Devices Developed by Fire Drills—Only Safety for Hospital Patients Lies in Fire Walls and Doors, So They Can Be Moved to Unaffected Sections of Buildings on Fire.

BY H. F. J. PORTER, M. E., NEW YORK.

Some ten years ago in a factory in a western city a panic occurred due to a false alarm of fire, and in this panic a number of girls were injured. Shortly afterward I took charge of this factory. Meanwhile a number of casualties occurred, which profoundly impressed me with my responsibility for the lives of the people employed in my building, notably the Iroquois Theater fire in Chicago and the Baltimore city conflagration.

Accordingly, I immediately began to study, in the first place, how I could prevent a fire happening, and, in the second place, in case of a fire occurring, how the occupants of the building would be able to effect their escape promptly and readily without panic and accident. When I started to obtain these results I found myself confronted with many obstacles. I called in the chief of the fire department for advice, but he told me that, beyond making certain provisions to prevent a fire and developing a fire fighting brigade, he could be of no assistance. I then secured the services of a drillmaster from one of the public schools, but, after looking over the situation, he informed me that the problem was beyond his capability of solution, as my building was different from those in which he was accustomed to install fire drills. they having many and wide stairways, whereas mine had only one narrow one, and the people with whom he was accustomed to deal being children subject to discipline, whereas my people were adults, who could not be controlled in an emergency. I then applied to several of the large representative manufacturing concerns about the country, only to find that in no instance had they installed a fire drill which would take the employees out of their building.

Being thrown on my own resources, I developed what was, as far as I have been able to ascertain, the first factory fire drill in this country which actually took the employees out of the building. I did not accomplish this result, however, without having to make a number of changes in the build-

ing, installing in effect a separate or exclusive stairway exit from each floor. I did this because I found that when the occupants of the various floors tried to make their egress from them simultaneously by means of the single stairway, the various streams of people collided on the landings and the stairway acted like a funnel into which many streams were pouring, but out of which there was only one small opening from which they could emerge.

When this fire drill was finally operating successfully, it emptied the building of between 300 and 400 occupants within three minutes. The frequent repetition of this fire drill taking the people out of the building onto the street aroused the interest of the public so that other local manufacturers wished to have a similar installation in their factories and I soon found myself in demand aiding them in working out similar problems in their factory buildings, which were as difficult of solution to them as mine had been to me.

In all of these cases I discovered, much to my surprise, that the exit facilities were entirely inadequate for the large number of people housed in the buildings in case an emergency should call for the egress of everybody within a short period of time. Therefore I found it necessary to increase these facilities, putting in a separate stairway for each floor in almost all cases, so that the occupants of a floor could enter their own stairway and make their descent and egress from the building without colliding with the occupants of any other floor.

This was the beginning of a study, continuing through a number of years, covering methods of fire prevention and of exit capacities for the purpose of improving the conditions affecting safety to life in buildings of all kinds and descriptions. In the course of this study I came to realize that, although stairways serve as satisfactory exit facilities under normal conditions, yet when crowds attempt to use them under emergency con-

ditions they become congested and dangerous on account of their inadequacy. The same is true of elevators. Fire escapes have for a long time been recognized not only as fire traps per se, but as indicating by their presence the fact that the buildings on which they are located are lacking in adequate interior exit facilities. I soon found that practically all buildings which contain many people actually are unsafe, especially high ones, and that attempting to make their occupants safe was a problem not of drilling people how to escape from an unsafe building, but of making the building itself safe, and then no drill would be required because no hurried evacuation of the building would be necessary.

I gradually evolved a method of making buildings safe for their occupants in case of emergency by supplementing the vertical exits, in which latter category fire escapes, stairways, and elevators are classed, with what I call "horizontal exits," which not only serve as means of escape by themselves, but convert the vertical exits into safe features also. This horizontal exit was developed either by supplying new or developing old division walls running across the buildings from cellar to roof with doorways in them, so that people could pass horizontally through the latter from over a fire or from a fire on the same level, close the fireproof doors after them, thus providing a barrier against the fire, and then find themselves in a section of the building or in another building where they would be perfectly safe and could stay until the fire was extinguished or from which they could make their descent to the ground by means of the vertical exits under normal conditionsthat is, without undue haste and in safety.

It was not until the Wolff factory fire in Newark in the fall of 1910, in which twenty-five lives were lost and many people were injured, and the Triangle Waist Company's fire in New York in the spring of 1911, in which 147 lives were lost, that I found that my many years of work in this field, together with the publicity which it had been accorded, had had a cumulative effect and that people realized that the occupants of crowded buildings were not safe in cases of emergency owing to the inadequacy of their exit facilities.

Taking advantage of the public sentiment which had been crystallizing around this thought, I succeeded in obtaining a group of representative citizens connected with some of the civic and technical organizations with which I had been working along these lines, and we went to Albany and secured a hearing before the governor and the two houses of the Legislature, asking for the appointment of a state commission to study the problem of safety to life in crowded factories and recom-

mend legislation to effect its solution. In fact, the delegation stated specifically that the people in these buildings had but two alternatives in case of fire-namely, "to burn to death or jump to death." Thus came about the New York State Factory Investigating Commission, which was authorized primarily to provide relief to the hundreds of thousands of employees throughout the crowded factories of the state from the serious danger to life from fire. I was appointed "adviser on the fire hazard" to this commission, and associated with me in this work was Mr. A. L. A. Himmelwright, C. E., of wide experience in construction work, and we have remained associated ever since on work which has developed as a result of the recommendations of this commission.

The studies which we made of the capacity of stairways for the commission confirmed those which I had made previously alone, and the results, when published, indicated that mine were the first studies of the kind which had ever been made, or at least of which any records were available. These studies showed that an abnormal condition had been allowed to develop in the industrial field by piling factory on factory, each one containing upward of 100 working people per floor, and having for their exit facilities only one or possibly two stairways, the capacity of each of which would not exceed at the most twenty or twenty-two people per floor. If access to one of these stairways should happen to be cut off by fire, the other would have to bear the burden of caring for the total occupancy of the floor.

I recommended to the Factory Investigating Commission that there be required two exits from each floor, at a distance from each other, so that if one should be cut off by a fire, the other could be used. I recommended also that if these exits were of the vertical type, the occupancy of each floor be limited to the capacity of one of these exits; but if one of them was of the horizontal type, the occupancy could be increased to the capacity of the floor area at the rate of one person for every five square feet in the smaller of the two sections of the building formed by the division wall.

After many public hearings and conferences and much correspondence the general principles which I laid down were accepted by the commission, and they proceeded to frame legislation to make these principles effective. Meanwhile my investigations into safety conditions in buildings had extended outside of factories and into buildings of all kinds, including public institutions, such as hospitals, asylums, etc.

In this latter connection I remember having an interesting experience several years ago when I

was asked to look over a large hospital in an eastern city and make a report on it, in order to inform the authorities in charge what, if anything, should be done to insure the safety of the lives of the helpless occupants in case of fire. As no arrangement had been made by the architects to provide such safety, it devolved on the authorities in charge to take such steps as they thought proper to meet this deficiency.

Having canvassed the experience of the officials of other hospitals in this country and in Europe, and finding that no hospital offered any provision whatever of this nature, in the course of their further pursuit of information as to what to do there was brought to the attention of these authorities a chute fire escape somewhat like the "down and outs" one sees at recreation parks. This consisted of a steel cylinder, with a helical slide in it of the same material and furnished with entrance openings in its side. Two of these were installed on trial. It was intended that in case of a fire the helpless patients would be thrown into these chutes through the side openings at the different floor levels, from which they would slide by gravity down to the ground, where they would be cared for by attendants, who would take them away as rapidly as possible and provide for them elsewhere.

On first being told of this arrangement, I felt that my informant was imposing on my credulity until he insisted that such was the safety measure which had been provided, and it was with considerable reluctance that I was persuaded to spend the time that would be necessary to see the operation of this appliance. I, however, interviewed the superintendent, who told me that it worked perfectly and that he had fire drills in it every month. I asked him how he arranged to take the patients from their beds and get them into the chute. He told me that two nurses were assigned to the duty of taking the four corners of the blanket underneath the patient and pinning them together over him with a specially large, strong safety pin. Then the patient would be lifted by means of this blanket from the bed to the floor and dragged to the chute, into which he would be thrown. As there were only two nurses and about 25 patients in his ward, I asked how long it would take to empty a ward by this means. The superintendent said he had never timed the performance, but estimated that it would take about a minute for each patient. As twenty-five minutes would be consumed in this process, it seemed to me that the safety to the patients who would be among the last to be put into the chute was not thereby insured, for I doubted if the nurses would remain faithful to their task for such a length of time in

the face of a real fire, which in the meanwhile might gain considerable headway.

As he had told me that they had frequent fire drills, I asked him if it would be practicable for him to have one for my benefit. He readily acquiesced and issued an instant order, and I prepared myself to watch an interesting performance in which there would be involved a large number of blind, lame, imbecile, tubercular, sick, and injured in all stages of infirmity, old people as well as babies, together with the able-bodied attendants, who would be included. I asked him if he did not find that an experience of this kind had a serious effect on the patients, and was surprised to have him reply that he hoped I did not think that he included the patients themselves in the fire drill. To my inquiry as to what purpose he should drill anybody else than those who were to be the participants in the performance in case of an actual fire, he told me that it would not do to drill the patients, as such an experience would kill most of them. It seemed to me strange that he should go to the trouble of introducing a method of saving the people which would result in almost as many fatalities as the fire itself would cause. and I asked him whom it was that he drilled. To this question he answered that he drilled only such able-bodied men and boys as were at the time at work on the grounds in the vicinity. He could not explain very satisfactorily the object of drilling these people, but in a general way he expressed the idea that the patients, seeing them go through this performance, would observe the working of the chute and that they would somehow be expected to go through a similar experience in case of a fire.

I asked him what was the program of his drill. and he said that he usually had about ten of these able-bodied males go to the top of the chute and jump in, and, as they always came out at the bottom, it exemplified the satisfactory operation of the chute and this served as the periodical fire drill. I asked him why he did not have more people in the drill, some of whom would be located at each floor, and have these latter jump in while the stream from above was going down, thus carrying out more nearly the actual conditions that would occur in a fire. He told me that he had never considered that feature, but that anyhow he did not have enough people to develop so complete a demonstration, and that, even if he had, he doubted very much if those outside would be willing to jump, with their boots on, on top of those within, or vice versa, as the result might be disastrous to the faces of those who were passing down.

While we were talking we proceeded to the base

of one of these chutes, and at the same time the men and boys who were to make the demonstration ascended to its top. On our arrival at the site everything was ready, the signal was given, and the demonstration started by the group on top jumping in, and we held our watches to see how quickly they would descend. To our great surprise they did not come out at the lower exit as quickly as we had anticipated, and we waited and waited. We could hear quite a commotion in the upper regions within the chute, and gradually the source of this noise seemed to descend slowly until finally one of the men emerged, and then the rest one after another. It was then disclosed that the salt air had rusted the steel to such an extent that the slide was very rough, developing so much friction that it did not operate as intended, the participants having to gradually work their way down from the top, and meanwhile they were stirring up rust and dust to such an extent that they were not only covered with both from head to foot, but inhaled and swallowed considerable also, so that they were in a sorry plight.

The superintendent apologized for the failure of his apparatus, and remarked that was always the way when a demonstration was given without previously rehearsing for it, to which I replied that he could not always have a rehearsal just before a fire would occur, and that I thought this whole method of saving people could hardly be called practicable. Not wishing to acknowledge that the apparatus was a complete failure, he said that if I would come to the chute installed at the other end of the building he knew that would operate more satisfactorily, because they used it daily to slide the wash down through it and thus it was kept clean and smooth.

Wishing to be courteous to my host, I agreed to this proposal, and, as the men and boys seemed to be willing to help out in this continued demonstration, we adjourned to the other chute, where they started to repeat the performance. When, however, the men arrived at the top of the chute, they called down that they could not enter it, as it was full of wash. This ended the opera bouffe exhibition of the practicability of the chute type of fire escape as a safety measure for helpless patients in hospitals in case of fire.

The superintendent then in a most disheartened way asked me what they were to do for a substitute, for as far as he knew this device was the only one that had ever been presented to hospital authorities as a life-saving measure for the patients in case of fire. I told him that I thought I had a method which was more practicable, and he said he hoped I had, for architects had evidently never been able to suggest anything for the pur-

pose. I then described to him the division wall arrangement, with its horizontal exit, and he seemed delighted to know that so simple and practical an expedient was available and wondered why it had not been thought of before.

In looking over the hospital I found that there were division walls already there which could be developed into fire barriers by properly extending them across the building and through the attic and roof, and by properly protecting the openings in them with fireproof doors. Thus the hospital would be divided into a number of contiguous sections, with horizontal exits at each end of each section. This could be accomplished with very little disturbance to the patients and very little expense to the authorities. In case a fire should occur in any one of these sections, it would be confined there by the barriers provided by the division walls, and the patients could be wheeled on their beds through the horizontal exits into the adjoining sections, in which they would be perfectly safe, for with the fireproof doors closed behind them the fire could not follow them there. Meanwhile a fire fighting brigade, developed for the purpose and promptly summoned by a specially designed fire alarm signal system, would attack the fire and endeavor to extinguish it in its incipiency.

Shortly after the two holocausts above referred to, the Department of Charities of the city of New York, having under its jurisdiction public hospitals, almshouses, homes for the aged and infirm, tuberculous sanatoriums, and other buildings of a similar character in which feebleminded and blind patients were housed, asked the fire department to make a survey of their properties and recommend to them what provisions should be made to insure the safety of the helpless occupants of these buildings in case of fire.

A group of experts composed of representatives of the fire department, fire protection engineers, architects, and experts from the fire insurance interests made a report, recommending that thirtytwo of these buildings be furnished with additional fire fighting equipment and fire escapes of the chute type similar to those already referred to at an expense of over \$200,000. Before this appropriation was finally made by the city authorities, the report was submitted to me for my opinion as to the practicability of the recommendations embodied in it, and to see if the principle of the division wall and horizontal exit could be developed in these old buildings at a cost which would not be prohibitive. It required only a superficial study to see that the recommendations embodied in the report were undesirable, inadequate, and in many cases impracticable, and I was asked to make a report on the situation as I saw it. My study resulted in a recommendation that the majority of the buildings be treated so as to develop existing walls into division walls. My estimate of the cost of the adoption of this principle, making safe all the buildings of the department, nearly 200 in number, was approximately \$175,000. As my recommendations seemed to appeal to the intelligence of the authorities, they were adopted and put into practical application.

The Department of Corrections, controlling the prisons, work houses, houses of refuge, etc., also followed suit, and, as some of their principal buildings were contiguous to those of the Department of Charities, I was asked to devise and install a modern fire alarm system to cover all the buildings in that group and have it uniform in all the buildings of both departments. Soon after this the authorities of Bellevue Hospital asked for a similar report on their old buildings, and my recommendations were adopted there also.

The Department of Public Health and Charities of the city of Philadelphia also asked me to look

over the group of old buildings constituting what is termed "Blockley," where the indigent and injured wards of the city are housed, and report on the feasibility of developing division walls and introducing my horizontal exit principle there. As fast as the authorities of these institutions learned of this safety development they opened correspondence with me and arrangements were made for its installation.

With this arrangement in institutions of this character, the procedure in case of fire is so normal and rational that there should be a minimum of excitement, for everyone acts in accordance with the dictates of his natural inclinations. The instructions are very simple, are given to the attendants when they come to the institution, and require no drill. The patients are not disturbed in their beds, being wheeled into the adjoining sections. This procedure will be described in detail in a subsequent article.

The fire alarm system is audible in the wards only to the attendants, but calls the fire fighters from their quarters.

LUNCHES FOR SCHOOL CHILDREN.

Necessity an Outgrowth of Economic Destitution—Free Lunches Versus Lunches at Cost
—School Feeding and Education—The American Tendency—The New York Movement—Economy of Central Kitchen—Medical Inspection of Handlers—
The Cost—The Profit in Citizenship.

BY EDWARD F. BROWN, EXECUTIVE SECRETARY NEW YORK SCHOOL LUNCH COMMITTEE.

THE genesis of the school lunch movement is to L be found in the destitution of the people. The intensity of the cruel struggle for existence brought on by modern industry has helped to perpetuate poverty, with its entourage of ignorance, disease, vice, and crime. The absence of the necessaries of life has resulted in a class of badly nourished children. Frequently, however, this subnormal condition is also the result of ignorance of the parent in the proper selection and preparation of food. This incompetence of the traditionally efficient mother is traceable sometimes to the fact that her early economic history embraces chapters of physical incapacity—child labor, lack of domestic training, early marriage in a period of unpreparedness, absence of time, inclination, and vitality to learn the science of domestic economy.

When we discovered a staggering array of malnourished children in school—tubercular, anemic, flat-chested, some so torpid from hunger and weak from exhaustion that the lessons fell on wondering eyes and listless ears—we groped around in the blackness of the situation for a remedy. Food was what they needed, and we gave them food. So much for the beginning of school feeding. FREE SCHOOL LUNCHES VERSUS SCHOOL LUNCHES AT COST.

In England, with its traditions of peasant exploitation, the social renaissance faced a situation so acute that in the beginning a policy was formulated which provided for free feeding of necessitous children. The pendulum which had swayed to the side of serfdom, indifference, and calloused neglect had now swept to the side of grudging compliance first, then liberality fraught with fear that to deny would culminate in bitter, bloody struggles which actually did occur.

There is much that might be said on the wisdom of such a policy as obtains in New York City, and I shall attempt to give an unbiased estimate of both sides.

The physical welfare of the child today is an index of the sturdiness of the state of the future. In the proportion that we conserve the strength of the child, we may expect it to return to society the fruits of such nurture. The child who is denied proper nutriment—regardless of the cause—is the child who is likely to grow a devitalized body susceptible to disease. Such condition is not one to conduce to individual economic independence.

From this class springs the intermittent worker, the unemployable, the potential pauper. It is for this group, unable to support itself through toil, that we must spend a large portion of our taxes to build and maintain hospitals and like institutions. We must determine in our own minds whether we



Fig. 1. Cooking on a large scale means economy. One central kitchen prepares the food for three to five schools. Five kitchens cook for seventeen schools, with registration of 23,000 children.

can afford to neglect our children in such a way as to lead them straight to our mending depots.

The large sums of money spent for education are, so far as this assemblage of malnourished children is concerned, practically wasted. It is not expected that the child who is weakened from lack of food is in any fit condition to accept the benefits of our educational process. Let us take a concrete example.

SCHOOL FEEDING AND EDUCATION.

The medical inspectors of the Bureau of Child Hygiene of the city of New York found in 1913 about 13,991 children who were suffering from malnutrition. Owing to the lack of funds, the bureau has been enabled to examine only one-third of the school population for physical defects. If we assume that the same ratio of defects exists among the two-thirds unexamined, then there are in the city of New York 51,973 children who are in a malnourished condition. Based on the semiannual per capita of \$19 as the cost of education in New York City, the \$987,487 spent for educating this group of children has undoubtedly failed to bring about the results which might be reasonably expected if the same sum of money were expended on the education of physically normal children.

The New York School Lunch Committee, at a net deficit of less than \$5,000, during the school year of 1913-1914, has served over 1,250,000 portions of food to the children in seventeen schools, with a total registration of nearly 25,000. Thus

it is apparent that \$5,000 spent on the feeding of malnourished school children would have enhanced the returns which might be expected from the \$987,487 or any sum spent on education.

Education is provided in such bountiful measure because it is a good state policy. It protects society against illiteracy and the train of evils which follows in its wake. In the same sense that education is a defense against national decadence, so the building up of sturdy physiques is a means of warding off the enormous cost of rearing and subsequently caring for a race of constitutional degenerates.

The return in social efficiency which flows from the solicitude of a state in the nurture of its wards is so great as to outweigh the actual cost of providing social agencies to care for an adult population stricken with disease and defects, many of which can be traced to early neglect.

On the other hand, there are those who hold that it is not the function of the state to provide food—that it tends to pauperize the population. They ask if the state provides food, where are we to draw the line of demarcation? The unfortunate condition is the result of parental indifference. Are we to encourage such a state by relieving them of the just share of their burden? A premium is thus placed on parental inefficiency. Such a liberal tendency as the provision of free food would tend to augment the conditions which, to say the least, are deplorable and costly.



Fig. 2. A sufficient portion awaits every child. A good three-cent meal will wholly satisfy a child's hunger and yield sufficient nourishment for growth.

THE AMERICAN TENDENCY.

The general tendency of the American school lunch movement is in the direction of providing food and having the children pay for its cost. This has taken from the activity the strain of charity. The most persistent cry of all the opponents of the measure has been that school lunches tend to disrupt the home—casting a pall over the

picture of peace resembling the contented Cotter's Saturday Night. Of course, those who assume that the children who clamor for food come from homes which are intact are justified in the stand they take. But it is a different picture which looms up before the administrator of school lunches—he sees that the economic condition of many families has started the trend away from



Fig. 3. Socializing the noon hour. Orderliness and clean service add to the value of school lunches as an educational factor.

the home and to the factory. Industry has already destroyed the home, which the school lunch movement seeks to help put together. Wives have been compelled to supplement the meager income of the chief breadwinner by factory labor. Where the family is large, industry has invaded the home through the pernicious system of homework-factories sending work to be finished in dwellings. where mothers snatch brief moments from the cares of the household to labor incessantly for a mere pittance on such things as sanitary toothbrushes and sanitary hairbrushes, made in miserable and unspeakably filthy tenement homes, with the smallest children harnessed to the task. Whether the mother goes into the factory to work or whether the factory comes into the tenements of the poor, the result invariably is the neglect of household duties; so that the child of school age whose mother works out or whose mother is being worked in finds itself at noon without the wellbalanced rations that the developing body of the child must have in order to grow strong. It is here that the school lunch movement performs a real public service. While other agencies are engaged in the work of raising wage standards in industries, and others are interested in the problem of making the home a livable place, and still others are absorbed in the work of abolishing home labor. the children are growing (?) up in neglect. When tenement homes will be cleaned up and made into

cheerful places, when the man shall receive a living wage for his work, when it will be possible for the mother to remain home to bring up her children in an atmosphere of cheer and comfort, when home work is abolished and school children, through intelligent mothers, are well provided with food in proper quantities at proper times—then the school feeding activity will have no place; its purpose served, a motion will be in order to disband the same, and that, I am sure, will be cheerfully carried.

But the committee has a purpose other than the mere provision of food to children. Its social educational aspects are not to be underestimated.

With the theory of school lunches thus briefly reviewed, let us examine the New York system of providing lunches at cost.

THE NEW YORK CITY SCHOOL LUNCH MOVEMENT.

The movement in New York City is the most extensive provision of meals at cost to children in the United States. The activity is carried on by the New York School Lunch Committee, a voluntary noncommercial group of interested citizens, with a paid staff of forty workers.

From 1908 to 1913 the New York School Lunch Committee, dependent on uncertain voluntary contributions, maintained a lunch service, commencing in two schools and gradually increasing to nine. In the summer of 1913, through the noble gift of Mrs. Elizabeth Milbank Anderson to the New York Association for Improving the Condi-



Fig. 4. Mothers working out cannot provide their children with lunch at home. Warm nourishing food at minimum cost now replaces the stuff of the street.

tion of the Poor, the financial burden of feeding school children was assured for a period of ten years. The reorganization of the committee provided for the operation of seventeen schools, with

¹New York School Lunch Committee—Miss Mabel H. Kittredge, chairman; Dr. C. Ward Crampton, Dr. Thos. D. Wood, Dr. Ira S. Wile, John Martin, Mrs. Ernest Poole, Mrs. J. T. Ryerson, Mrs. Benjamin Whittaker, Mrs. V. G. Simkhovitch, Miss Lillian D. Wald, Miss M. A. Nutting, Miss Edna M. Klaer, Dr. Donald B. Armstrong, John A. Kingsbury, Willard D. Straight, Bailey B. Burritt, James H. Hutchens, Edward F. Brown.

a total registration of nearly 25,000, an increase of eight over the previous year. Under the enlarged program the committee has just concluded the first year of operation.

THE ECONOMY OF THE CENTRAL KITCHEN.

The distinctive feature of the work was the experiment with group or central kitchens. Under this plan the food for the seventeen schools was prepared in five central kitchens and distributed each day to the respective schools in large covered sanitary containers. In addition to providing penny-an-article portions of warm food at noon, a special service of milk and crackers in the middle of the morning was maintained for the children in eight anemic, cripple, and kindergarten classes. A year of the central kitchen has demonstrated the saving which can be effected thereby. In 1913 the committee operated nine schools and had to meet a deficit of \$4,320.94, making an average deficit per school of \$480.10. In 1914, when the committee changed its plan of operation by using the central kitchen, in operating seventeen schools it had to meet a net deficit of only \$4,-624.52. The average deficit per school was \$272.01, a decrease in the average deficit per school of \$208.09.

MEDICAL INSPECTION OF FOOD HANDLERS.

In order to avoid any possibility of disease transmission through the handling of the food by our workers, each employee submitted to a thorough medical examination to ascertain her liability as a disease carrier. In addition, two-thirds of the staff were vaccinated.

SOME ADMINISTRATIVE DETAILS.

Each item of food sells for 1 penny. In order to insure to each child a maximum of nutrition, a rule was adopted which precludes a child from purchasing unless the first penny is spent for soup. This soup is made in varieties to suit every taste. The quantity is one-half pint, and there are twenty-five kinds, touching the three predominant national tastes—American, Italian, Jewish. After the first "forced course" the child may choose from a variety of expertly selected and hygienically prepared items consisting of

Bread fritters, Vanilla cake, Tomato salad, Chocolate pudding, Cabbage salad (with boiled Apples on stick, dressing), Grapes, Lentil salad, Bread pudding, Apples, Crackers of all kinds, Prunes. Potato salad, Sliced bananas with milk, Ice cream, Baked apples, Sweet chocolate squares, Apple pie, Apple sauce, Rice pudding, Crackers, Cornmeal pudding, Cocoa,

Jelly cake—2-egg sponge cake with jelly, Sandwiches—jam, lettuce, pot cheese, American cheese, egg and onion, meat and bologna, bologna, butter, radish.

Owing to the cosmopolitan character of New York City, it is necessary to divide the nature of our food into three classes. In the schools where Americans predominate we have American cooks, and the food is that usually found in the American home. In the Jewish schools we employ Jewish cooks; the food is "kosher," and regularly inspected by a rabbi to insure against religious or racial offense. Italians are in charge of the Italian schools.

No food is given away free. Frequently where a family languishes in the grim twilight of poverty the charity society provides the mother with funds to give to the child. As a part of its treatment of the case in this manner the poor child is not singled out as a pauper's offspring. The idea of school feeding at cost has taken deep root. It is accepted by all the children—and is more acceptable, perhaps, than free food, because money is paid for the food provided. It has also engendered a respect for the food, which would be lacking if it were given away free.

THE EDUCATIONAL ASPECT.

The underlying purpose of the school feeding movement in New York City embraces a broader aim than the mere provision of food to children whose parents for some reason are unable to supply their wants at noon in the home. We seek to reflect insofar as possible the hygiene of food and food handling through the child into the home. If evidence of the partial success of this aspect were wanting, we would need merely to refer to the many mothers who have come to our kitchen to inquire how to make the dish which tasted so good to Johnnie. Our efforts to inculcate the lessons of food economy are brought home through a series of mothers' meetings, at which the administrators of the activity explain the purpose of this movement.

THE SCHOOL FEEDING DEFICIT.

School lunches in New York City have not yet reached the self-sustaining basis. In providing food at 1 penny a portion and insisting that the children purchase soup first—the item on which the deficit is incurred—it is readily seen how it is necessary to meet a slight deficiency. The loss, amounting in 1913-14 to .0037 per portion, is due to the cost of supervision. The penny the child pays covers the cost of the food and its preparation. The total deficit for the school year in the service of 1,249,489 portions aggregated \$4,624.52. This sum was paid by the committee from the Anderson fund in the trusteeship of the Associa-

tion for Improving the Condition of the Poor's Department of Social Welfare.

THE COST.

From October 1, 1913, to May 22, 1914, the committee sold 1,249,489 portions of food, for which the children paid \$12,494.89. The average daily attendance was 3,337 and the average amount spent per child was 2.9 cents. Chiefly through the concentration of energy, made possible by the central kitchen plan, we have been enabled to save .0019 cents on the preparation of each item as compared with the year previous under the individual kitchen scheme.

The following comparison of the average net deficit per school under the individual kitchen plan in 1913 and the group kitchen plan in 1914 is en-

ugucening	* Number of		Average per
Year	schools operating	Net deficit	school
	9	\$4,320.94	\$480.10
1914		4,624.52	272.01

A saving in 1914 of \$208.09 per school.

The following table is the summary financial statement from October 1, 1913, to June 1. 1914:

Total expenditures\$ Total receipts	17,889.48 12,494.89
Gross deficit	
Net deficit\$ Deficit per penny portion	

THE AIM OF THE SCHOOL FEEDING MOVEMENT.

The ultimate aim of the activity under discussion is to provide a hot, stimulating, and nourishing lunch to the school children who are unable for any reason to procure a warm, well-balanced meal at home. The large and unnecessary number of malnourished children whose mental and physical growth is being impaired indicates the necessity of such a movement as ours.

We believe that, with a further concentration of our energies and an extension of our field, pennya-portion school lunches will be self-sustaining, except for the cost of rent in the school buildings. It is our purpose to demonstrate to the educational authorities the possibility of a self-supporting school feeding plan, so that the same may be installed in the localities where such a service is most needed.

The committee plans in 1915 to extend its work to eleven additional schools, making twenty-eight in all, with a registration of over 44,000 children to whom this service will be available. For such extension the committee is asking the Board of Education to cooperate to the extent of furnishing the necessary equipment, which will entail an expenditure of approximately \$6,500.

HOW NURSES MAY CONTRIBUTE TOWARD A HOSPITAL'S SUCCESS.

A Happy, Congenial "Family" Will Graduate Loyal Nurses, Who in Their Turn Will Act as Publicity Agents to Popularize the Hospital—Nurses Meet Many People and Can Often Help by Molding Public Opinion.

BY MISS AMY BEERS, SUPERINTENDENT JEFFERSON COUNTY HOSPITAL, FAIRFIELD, IOWA.

THE personnel of the nursing staff stands as a preeminent factor in the success of any hospital, and especially does this hold true in the small public hospital situated in a rural community. The people want a hospital with some home atmosphere, where they are made to feel from the moment of entering until their departure that every one connected with the institution is personally concerned in their welfare and is earnestly striving to make them comfortable.

In order to accomplish this, first, the personality and professional training of graduate nurses who assist in the management are to be considered. They must be dignified, but with a gracious manner, and should possess the art of adaptability. They must be impressed with the value of their individual efforts, and made to realize that only by perfect cooperation with the superintendent and unfailing loyalty to her ideals can the work become established. Next, the qualifications of candidates for admission into the training school should be carefully studied. In small hospi-

tals, it seems that personal interviews are necessary in order to exercise good judgment in the final selection of pupils. It is almost impossible through correspondence to determine their real fitness for the work. Will they possess the requisite home training, making them courteous, patient, kind, industrious, observant, and thoroughly reliable?

Providing suitable students are selected and a complete training given, with proper supervision, the hospital is bound to be successful, for its reputation depends largely on the ability of the nursing force. It is absolutely essential that the nurses have pleasant environment (a comfortable home, with provision for recreation), that the hospital family be a happy one, to insure the steady interest and enthusiasm so indispensable to success. Teach the nurses to give attention to detail; things that appear to be mere trifles to people in normal condition loom up as real troubles to the sick.

In organizing hospital work in a new territory,

plan for a sufficient number of assistants, that they may give the "personal touch," which means so much to those who have never been away from home and familiar faces when ill. Instill into the nurses the spirit of justice, giving all patients their best service, never by word or deed allowing personal preference to be known. Frequently sick people are supersensitive and somewhat childish. When dealing with country people, who are most democratic, it has been found better to make no distinction between private room patients and those occupying the ward beds, particularly when they mingle in the sun rooms during convalescence. or have visitors in common; nor should the care of "county" or "free bed" cases be any different. The good will and gratitude of this last class will help to make the hospital popular.

Promptly discourage any discussion of the patients by the nurses, either inside or outside of the hospital, but help them to form the habit of telling the impersonal points about their work and the strides forward in their profession in such a way as to attract the interest of the people to the extent that they will consider the hospital worthy of their assistance, and consequently circulate favorable reports concerning its usefulness.

It is highly important that the members of the medical staff have equal privileges, and are kept informed regarding the hospital equipment and the advantages offered for scientific work. Aim to follow their orders and refrain from any criticism of their methods, for often this is the source of much dissatisfaction.

Too much care cannot be given to the thorough instruction of the nurses in ethics and hospital etiquette, and their personal responsibility in helping toward the success of the hospital. Indiscreet behavior will reflect directly on the hospital and undo the results of many months of well-directed efforts. Have them imbued with the sentiment that their future success is dependent on the status of the hospital from which they graduate.

During the last six months of the senior year, if special classes are conducted in advanced nursing topics, with reference to administrative work, and a course of reading outlined, thereby assisting the students to find the line or field suitable to them and fitting them specially for it, their enthusiasm and loyalty for the hospital will become fixed, and they will develop into valuable workers. Each graduate from the training school should be an educator.

Third, the graduate nurses of the district have a wonderful influence, which may be directed either for or against the hospital, but with tactful management may prove of inestimable value. They meet people in their homes in an intimate manner, and are constantly being consulted on the advisability of entering the hospital for surgical operations, obstetrical delivery, chronic troubles, treatments, and even x-ray and laboratory work.

The superintendent of the hospital might keep in close touch with the outside graduate nurses and the school nurses, unconsciously securing their hearty cooperation, by establishing a registry at the hospital, making no charge whatever. The doctors are very pleased to have some definite place from which to secure a competent professional nurse, and it is convenient for the nurses to keep the hospital superintendent informed as to their whereabouts. The registry's usefulness to the nurses may be extended by furnishing supplies to them at hospital prices, renting certain articles that are expensive and not often required outside of the hospital; in short, making a hospital bureau for the nurses.

By calling the outside graduate nurses to the hospital for "special" cases, the superintendent can learn of their ability and can interest them by explaining all the new methods and equipment, by discussing nursing affairs in general and local conditions in particular—then they are inclined to use their influence wisely. Another way to attract their interest and to keep them enthused for the hospital is to organize a club and include the graduate nurses in the hospital; have monthly or quarterly meetings at the nurses' home and prepare short, interesting programs, followed by light refreshments and music. The discussions should be open, and a report of the adverse criticisms they have heard regarding the hospital will prove of value, and future trouble may be averted. In order to have the meetings well attended, they must be of benefit to the graduate nurses, and this will require the expenditure of some time and energy. The professional journals will be a great aid in making up the programs; the history of interesting and unusual hospital cases might be cited, always omitting the patients' and the doctors' names; any discovery or invention that assists in the nursing care; any new books or publications for nurses; any national or state movement associated with nursing affairs; practical demonstrations of new methods of procedure in nursing treatment; even amusing incidents and errors happening in the hospital might be permitted, if related in an entertaining manner, as a variation.

In resume the keynote is for the hospital management to take a sincere interest in the nurses, and they in turn will use their influence for the benefit of the hospital, thus establishing what the "medical freedom" leaders would term a "hospital trust."

KING'S DAUGHTERS' HOSPITAL, MADISON, IND.

New Institution of English Design—Will Be Fireproof and of Modern Block Type Construction—Interior Planned With Special Reference to Convenience.

THE King's Daughters, Madison, Ind., are to build a thoroughly modern hospital in their home city. Herbert L. Bass & Co., architects, of Indianapolis, have prepared plans and specifications for the building, which is English in design and of fireproof construction throughout. The entire exterior is of brick, with stone trim and tile roof.

The building committee was particularly wise in its selection of a large corner site, providing an ambulance entrance from the driveway leading from both streets to the building, which will be amply protected from noise and dust of the streets.

The hospital provides for 25 beds, divided between the various services, and will cost, exclusive of equipment, approximately \$30,000.

A great deal of thought has been given to con-



Fig. 1. King's Daughters' Hospital-General view.

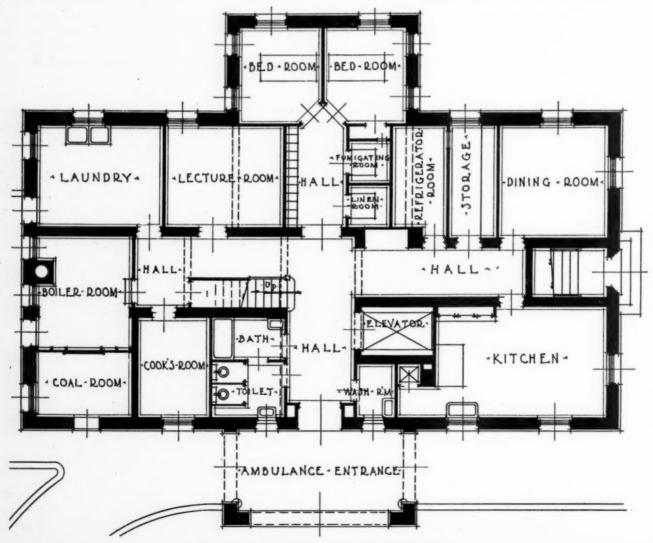


Fig. 2. King's Daughters' Hospital—Ground floor plan.

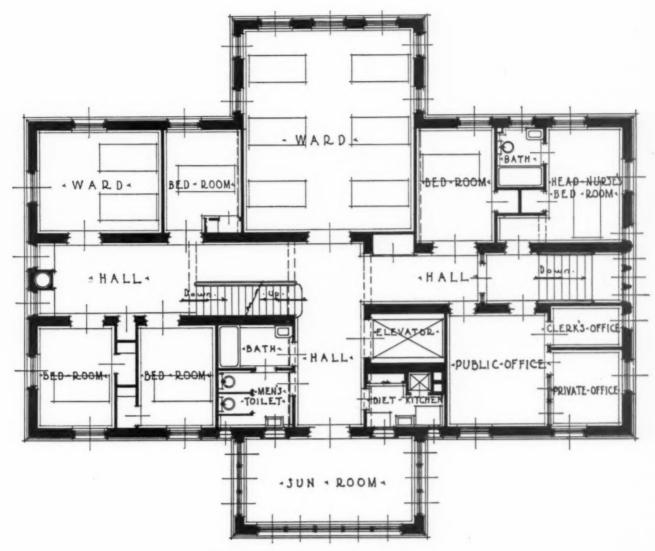


Fig. 3. King's Daughters' Hospital-First floor plan.

venience of nurses and physicians in caring for patients and to the comfort of patients themselves. All the private rooms and wards are provided with large windows, giving plenty of sunshine and fresh air. The sun porches on the first and second floors afford a comfortable place for an airing for convalescents in all kinds of weather. The operating room has a large overhead lighting surface, giving light from all directions at one time.

The architects have given special attention to sanitation, using a minimum amount of interior wood trim and providing sanitary composition floors, cove bases, flush panel doors, and even a cement balustrade on the cement stairway. The interior finish throughout and all exposed heating pipes and radiation will be white enameled.

A complete nurses' signaling system will be installed, so that a patient may call a nurse from his bed, the call being registered in the office and at head nurse's desk, and will not be released until

the nurse answers the call and pushes the button by the patient's side.

The plumbing system is very complete, with toilet and wash rooms on each floor, and several private baths and a shower bath on the ground floor. A portable tub is provided, that may be used in any part of the building and filled or emptied in bath room on each floor.

Special pedal-operating hospital fixtures for surgeons will be furnished in wash rooms adjoining dressing and maternity rooms. The main kitchen on the ground floor and diet kitchens on each floor are equipped with sinks, cupboards, etc., and are complete and convenient in every respect. These rooms and the operating room are ventilated by means of exhaust fans as well as by outside windows.

The building will be heated by low-pressure steam, cleaned by stationary vacuum cleaning machine, and all garbage and refuse will be disposed of in basement by an incinerator.

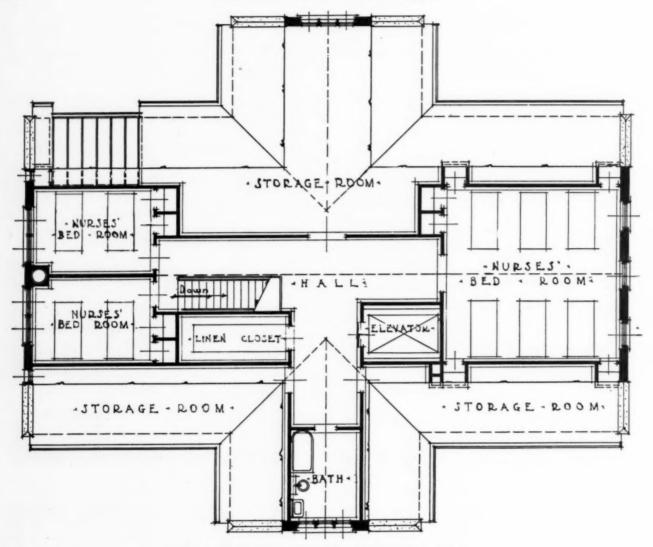


Fig. 4. King's Daughters' Hospital-Third floor and roof plan.

The building will have an elevator operating also a dumb waiter service from kitchen to each from main corridors and running to each floor, and floor.

FEEDING THE HOSPITAL—THE FOOD.1

Milk and Its Products—Butter, Its Uses and Its Substitutes—Their Food Values, Availability, and Physical Properties—Coffee and Cocoa and Their Uses in the Hospital.

BY MISS LULU GRAVES, CHIEF DIETITIAN LAKESIDE HOSPITAL, CLEVELAND.

PAPER III.

WHILE cheese contains nearly all the nutritive constituents that may be obtained from milk, butter contains practically the fat only. Most laws or ordinances require that milk shall contain on an average 3.5 percent of fat, but this varies according to the breed of the cow, her care, condition, age, etc.

The fat may be separated from the milk by allowing it to stand in a cool place until the cream rises to the top, because of its lower specific gravity, then skimming it off; or it may be removed

much more completely by the use of a mechanical separator. The proportion of cream obtained depends on the method of separating, and with the machine can be regulated to obtain any percent of fat desired, the average being 40-45 percent.

Cream is regarded as a fuel food, a pint yields about 1,400-1,500 calories, and is a desirable form of fat to be used in the diet of the sick, for it is very easily digested. Dr. Hutchinson says, "Good cream (45 percent) contains as much fat as a similar quantity of most cod liver oil emulsions, and is usually much better borne."

Cream, however, is an expensive form of fat,

¹This is the third in a series of papers on "Feeding the Hospital." Last month, "Milk, Butter, and Substitutes." Next month, "Vegetables, Fruits, Cereals, Eggs, Poultry, Fish."

and when used by a healthy person with a normal digestion is frequently taken because of a habit formed of demanding cream with cereals, desserts, etc., when milk would answer every requirement; or to gratify a craving for rich foods rather than for its nutritive value. It is not an uncommon thing for people to insist on cream, either plain or whipped, with a dessert otherwise as rich as should be eaten at the end of a heavy meal.

Devonshire, or clotted cream, is prepared by heating milk in deep pans in such a way that a rapid and very complete separation of fat is obtained. This form of cream contains as much as 60 percent fat and not more than half as much sugar as ordinary cream. For this reason it is particularly beneficial in the treatment of diabetes.

Butter may be obtained from either sweet or sour cream. That from sour cream has a flavor, due to growth of organisms during the ripening of the cream, which is characteristic of good butter. Naturally, butter made from sweet cream lacks this flavor, but is preferred by many, especially people of southern and central Europe. Butter without salt is also liked by these people, but neither the sweet not the unsalted butter is very commonly used in this country, except by the people who have come here from Europe.

Salt is not ordinarily used in large enough quantities to act as a preservative. The fact that sweet butter does not keep as well may be partially accounted for by the lack of bacterial action during the ripening and souring process. Considerable care is necessary to produce butter with an agreeable flavor. Many of our most modern dairies produce a very uniform and excellent flavor by introducing pure cultures of the right kind of bacteria and controlling the number of them.

While the essential constituent of butter is fat, it contains besides this small quantities of sugar, salt, and casein. If butter is kept for any length of time, this casein undergoes fermentation and the butter becomes rancid. Thorough washing removes much of this casein.

Carelessness in handling cream or butter is not infrequently practiced. In small dairies or rural communities, where a rigid inspection is not enforced, this is particularly apt to occur. As a result, a butter is produced which is too rancid to be put on the market until it is subjected to a process of renovation. It is melted and the bad odors removed by blowing air through it, or by other methods of applying heat and washing it. The clear fat, which is now quite sweet, is drawn off, mixed with milk and churned again. The re-

sult of this is a product which is much improved. The grade depends on the grade of the stock from which it was made, and it differs somewhat in composition from true butter and should not be sold as such. It is known as process or renovated butter. Tubs of what is known as dairy butter are often renovated butter.

Butter fat is rich in fatty acids, which are soluble in water—butyric, caproic, and capric; and others which are not soluble in water, oleic being the most abundant. Butter fat contains 40 percent of olein.

The fat of the human body has a large percent of olein. Olein has a low melting point, and is therefore easily digested and absorbed. Taken in connection with other foods, butter is a highly digestible and nutritious food. Cooked butter, on the other hand, is more apt to disagree, owing to the fatty acids liberated by heat, which are irritating to the digestive tract. For a weak digestion is should be spread on bread, or combined with some starchy material, which will aid in preventing its coating the walls of the stomach and retarding the flow of the secretions. Liquefied fats are sometimes administered to coat the stomach and prevent the action of corrosive poison. The effectiveness of this treatment is apt to be overestimated, as the membrane is already moistened with mucus, and it is difficult to get enough fat to coat the stomach sufficiently.

Oleomargarine, or butterine, is a substitute for butter in which part or all of the butter fat has been replaced by other animal fats, or a mixture of animal and vegetable fats. This combination of fats has properties similar to natural butter fat, though the manufacturer must look also for fats and oils that are cheaper than butter and that can be readily obtained.

Suet and lard have a higher percentage of stearin and palmitin, both of which have a higher melting point than olein. As stearin solidifies more quickly than the other fats, it is more easily removed, and the fats having a lower melting point are mixed with oils and varying quantities of butter to give the appearance of the natural article.

A perfectly wholesome and nutritious product has been obtained which is as easily and almost as completely absorbed as butter. While the best grades of butter have a finer flavor and are more easily assimilated than any substitute yet produced, a good grade of oleomargarine is more wholesome and palatable than a poor grade of butter. It is available for people who cannot afford the more expensive article, and it lacks the two properties before mentioned which may be detrimental in butter—namely, the butyric acid,

which may be irritating to the digestive tract, and casein, which may cause decomposition; so there is no logical reason for the rather widespread prejudice against it.

It might be well just at this point to mention some other forms of fat commonly found on the market and used for food. The composition of these fats is chiefly different proportions of olein, palmitin, and stearin, the same as are used in oleomargarine. Olive oil and Wesson oil have practically olein only. The preference given to olive oil is largely due to its flavor. It is no more nutritious than other oils and is much more expensive. Owing to its high price, it is adulterated with cheaper oils; 20-30 percent of foreign oil may be used and not be distinguished. In the United States the adulteration is usually cotton-seed oil, and in Europe it is more apt to be peanut or sesame oil.

Cottonseed oil is used in enormous quantities in this country. Much of it is utilized in food material of some sort. Since it will stand a higher temperature without smoking than lard or butter, it is used a great deal for frying purposes, as well as in salad oils. Snowdrift and cottolene are combinations of cottonseed oil, and crisco is another which has been chemically treated to make its "cracking point" at a higher temperature. When the "cracking" or "burning point" of a fat is reached, it decomposes into fatty acids and glycerin; a substance, acrolein, is formed, which gives the characteristic odor to fried foods. It is this substance which causes fried foods to be hard for some people to digest, as it irritates the digestive tract.

Cocoa beans contain about 50 percent fat, and the greater part of it is removed in making chocolate. It is solid at ordinary temperature, and is known as cocoa butter. It more nearly resembles butter fat than any other natural fat on the market. It is not employed so much in cooking, but is used a great deal in making chocolate bars and coating chocolate candy. It is in considerable demand for medical and pharmaceutical preparations.

Tea, coffee, and cocoa have no logical connection with milk and milk products, but I shall speak of them here because it is a more convenient time to do so than may be found in the future discussion of food materials.

Both protein and carbohydrate are found in tea and coffee in very small quantities, but in a form which is not soluble, and therefore cannot be utilized by the body. They are in nowise a food, but cocoa and chocolate do contain nutrients which the body can use. All of them are stimulants, though their properties for stimulating are not equal; many adults do not notice any stimulation from cocoa or chocolate, and it is more apt to be noticeable in children, especially if taken in concentrated form or in large quantities.

The stimulating property in tea is thein, in coffee it is caffein, and in chocolate it is theobromin. Tannin, a substance in tea and coffee, interferes with the action of the digestive juices, and more particularly with the digestion of protein. In tea the amount of tannic acid increases with the time of infusion; the liquid should not be allowed to stand on the leaves but a very short time. The use of the tea ball permits of the desirable properties being dissolved and the leaves being removed before the tannin, which dissolves much more slowly, has become a part of the tea. A most delicate infusion may also be obtained with the samovar. In black tea some of the tannic acid is oxidized and made less soluble by a process of fermentation. This makes it less astringent than green tea, and there is present a little more of the thein and oil, which gives a flavor that is considered better by a majority of people. The difference in grades of tea is due to the difference in location on the plant from which the leaves have been taken. The small leaves at the tip end of young shoots are the choicest, while those larger and farther down on the plant are an inferior grade. Teas from different countries have different flavors. A blend of several varieties gives a better flavor and is more pungent. The use of milk or cream in tea is considered an outrage by connoisseurs; there is logic, however, in the use of orange, lemon, and other fruits if the brewing is done in a pot. The acid of the fruit somewhat neutralizes the tannic acid, though one does not get the natural tea flavor as completely when it is mixed with the flavor of the fruit.

The tannin in coffee is combined with caffein, and is found in smaller proportion than in tea; so much more coffee is used per cup, however, that the result is much the same. During roasting the aroma of coffee is developed and some of the acids driven off. Mocha, Java, and Rio are our common brands of coffee. Mocha produces a delicate, clear concoction; Java, a strong one; combined, they are a very good blend. The caffein is dissolved almost immediately, so the value of the percolator in making coffee is similar to that of the tea ball in making tea. Coffee is sometimes adulterated with chicory. One should not have to pay coffee prices for chicory, but it is otherwise a harmless adulterant. It gives a distinctive flavor which is liked by many in European countries and in our own southern states. Cafe au lait, used much by the French particularly, is made by combining a strong coffee, often with the chicory in it, with

hot milk. The proportion of milk used is much larger than that of cream ordinarily used, and, though the coffee is very strong, it is diluted to such an extent by the greater amount of milk that it probably has no more caffein than is in coffee made in the customary way. The use of cream in tea and coffee is condemned by some authorities on the ground that the tannic acid is precipitated by the cream, forming a hard precipitate, which is irritating and indigestible. Other equally eminent authorities say it is better to have this harmful substance made insoluble, so it is not absorbed by the body. We are apt to be advocates of whichever theory accords with our desires. A moderate amount of black coffee excites the flow of the digestive juices, thus giving it the nature of an appetizer in some instances, or a demi tasse at the end of a heavy meal may have value as an aid to the heavily taxed digestive organs. Taken in large amounts, tea and coffee are apt to be overstimulating, and are really nerve poisons for neuroarthritic patients. They are irritants in most cases of intestinal trouble. If used in excess, coffee is constipating; on the other hand, if taken in moderation, it may serve as a means of helping to get the required amount of water into the system and which might not otherwise be taken. To the average healthy individual, leading a comparatively active life, there is little danger in the use of coffee if not used to excess. Some time ago some experiments were made at Columbia University to determine the effects of coffee. Their conclusions were that small amounts of caffein increased the efficiency—for the time being at any rate, and no objectionable after-effects were found -and large amounts decreased it. This was more marked in those who were purely mental workers than in those who did some muscular work too. We have many cereal coffees on the market whose manufacturers claim much for them. As their name implies, they are made of some cereal or combination of cereals which has been parched and ground. It is true, they are not constipating nor overstimulating, nor in any other way harmful; neither have they any great virtue, as they have no nutritive value of any consequence. For one who is harmed by the use of tea or coffee and yet does not care for plain water, these substitutes may induce him to take more liquid than he otherwise would. Cocoa and chocolate have stimulating properties due to theobromin and caffein present, but they also contain fat, protein, and carbohydrate in large enough proportions to make them of value as food material; with the addition of milk they have considerable nutritive value. They are made from the beans of the cacao tree. These beans, which

are similar in size and shape to almonds, are separated from the long pod and fermented for a few days in order to modify the bitter taste. They are dried in the sun and roasted to develop the odor and flavor and give them the brown color. Next the hulls are removed and the kernels crushed. The hulls have been largely used as an adulterant for spices or in making a cheap grade of cocoa, and they have some value as cattle food. The kernel is ground to a powder, and, if cocoa is desired, most of the fat is removed, the amount remaining in the cocoa varying with different brands. In the making of cocoa by the Dutch process, it is treated by sodium, potassium, or magnesium in such a way that the fat which remains is more readily emulsified, and the alkali present in the cocoa causes it to remain suspended in the water or milk when cooked, not settling to the bottom of the cup so quickly. The alkalis present are not harmful, and in instances where mineral salts are needed would be beneficial. Van Houten's cocoa is made by this process, and has a higher percent of these salts than any other. The emulsion of the fat may help it to be more easily digested. In the German process ammonium is used. This gives a purer cocoa, as the ammonium compounds are driven off later. Cocoa may be adulterated with ground hulls, starch, or by having more fat removed than should be, as cocoa butter is a high-priced article. Because of the starch present it should be cooked long enough to make the starch grain soluble. Putting cocoa into a cup and pouring hot liquid over it will not cook it sufficiently. If little, or none, of the fat is removed when the bean is ground, chocolate is produced. Many people cannot assimilate so large a proportion of fat, so it is a better food when used with some other material. Even sugar added in candymaking gives a better product than the chocolate alone. Chocolate has been subject to considerable adulteration. Cheaper fats, such as beef stearin, may take the place of cocoa butter; seeds may be ground up with the cocoa bean, and even an imitation chocolate has been made from gelatin, sugar, iron oxid, and aniline dye, with a coating of shellac varnish to give the gloss of the chocolate fat. Theobromin is milder in its effects than thein or caffein, but it should not be given to young children in candy, pudding sauces, or other concentrated forms, especially if they be nervous and excitable.

An operating table on wheels is the latest idea in army hospital equipment. It is supplied with all the conveniences of a room in a modern hospital. There is an overhead light of great power, so that operations may be conducted at all times, an x-ray equipment, and also an ultra-violet ray water sterilizing apparatus, which will supply drinking water for the hospital patients.

THE HOSPITAL KITCHEN.

Most Important Part of the Institution, From an Economical Standpoint, Is Usually Equipped and Administered Unscientifically—A Proper Range—The Steam Table—
The Steamers—Dishwashing—The Urns—Miscellaneous Fixtures.

WOEFUL indeed and terrible to contemplate are some of the crimes against common sense perpetrated under the guise of scientific designing when applied to the long-suffering hospital kitchen. In days gone by the hospital kitchen was not designed—it "just done growed," like Topsy; then it began to be designed principally by persons whose education, in the art of preparing and serving food to a large number of people, had not had the chance to develop by practical work beyond the theoretical stage. Nowadays the dietitian is with us, armed with sanitary and antimicrobe crusade ideas which are excellent were she not prepared to carry cleanliness even beyond godliness, so to speak.

One good lady, not long ago, in conference with an experienced practical designer of hospital kitchens, declared point blank that under no circumstances should a canopy go over the range in a large new hospital kitchen. "No, sir; a canopy is a dirty, horrible contraption, and none shall go into our kitchen," said she.

"But, my dear madam, what will become of the steam and greasy air generated by frying and boiling? Every time one of your six oven doors is opened, greasy hot air comes out," gently suggested the perplexed kitchen expert. "You must admit that you cannot cook without producing steam and greasy air; you know the contrary is an impossibility. Now, that air being indisputably there, you must dispose of it somehow. If you don't suck it up under the canopy and conduct it to the open air, without coming in contact with the air and the walls of the kitchen, what on earth are you going to do with it?"

"Well, I won't have a canopy, and the hot air can go out of the windows; there are plenty windows," said the dietitian.

"But the walls and everything in the kitchen will become greasy, and dirt will adhere to them; everything about the kitchen will be greasy, and just think of what the poor help will have to stand with a six-oven center range pouring out heat all day and only the ventilation of the windows to carry it off. Your help will die off on your hands if any of them stay long enough, which they probably won't."

Is that lady convinced? Not when last heard from. She still persisted that a canopy is a dirty

thing, and evidently prefers to smear up the entire kitchen with greasy dust and asphyxiate the help, all on account of a supposed breeding place for microbes in a canopy, where no self-respecting microbe would live on account of the uncomfortable heat.

Now, had she insisted that the canopy must be of copper, so as to be durable and easily cleaned, owing to its noncorroding qualities, and had insisted on cleaning it once a week, she would have been all right. While to the common kitchen expert she might be slightly fine-haired in her demands, yet there would be no valid arguments against her getting what she wanted as far as practicability and good results were concerned: but when the theory is advanced that it is better to spread and smell vapor, grease, and heat all over a kitchen than to catch it where it is produced and force it to the open air by the combination of a canopy and a strong draught, so that none of it gets into the kitchen proper, it is time for common sense to step in, in the person of the board of trustees, and to banish theory in the person of the so-called expert dietitian.

The above is not fiction. It is unfortunately true, and, if the writer's limited personal experience yielded this sample of theory, how many other equally ridiculous theories referring to other items of kitchen equipment must have been perpetrated in the name of advanced modern, scientific, sanitary, dirt-hunting, microbe-haunted dietetics!

Yet we must not entirely blame our dietitian for declaring that a canopy is a "dirty contraption." Either she personally or the person who taught her had had a canopy which was a dirty contraption, which a canopy can easily be.

People put a canopy over a range, and expect that in some miraculous way the smoke and greasy vapor will go away through a small hole without any outside influence to induce it to do so.

Many canopies are installed all over the country which never fulfilled any mission except that of deflecting the heat down on to the cook and furnishing a lodging place for a good, thick coating of black, greasy deposit of the most inflammable nature. People who have suffered from this class of canopy, of which no doubt our dietitian is one, have reason to think they should eschew canopies because they do not know that it is not the canopy that is to blame, but the ignoramus who failed to connect the canopy to a flue having the proper

¹This paper is prepared by a thorough-going equipment engineer, who for personal reasons desires that his name shall be withheld. The MODERN HOSPITAL knows him and his ability, and vouches for both.—Ed.

area and draught provided to carry off the vitiated air of the kitchen.

A hospital kitchen is, after all, a simple thing compared with the kitchen of a high-class hotel, and the laws governing the equipment are of the simplest, and apply to the large or the small hospital and to those with unlimited or limited means equally and impartially, and, like death and taxes, we cannot escape their operation.

The first law is that you must have a given-sized flue with a given amount of forced or natural draught to carry away a given amount of heated vapor and grease-laden air generated above and around the kitchen range. The proper person to estimate the amount of flue space and fan capacity necessary to carry away the vitiated air in any given-sized kitchen is a food service engineer. such as are employed by the first-class kitchen equipment houses. The properties of the gases and other products to be taken care of in kitchen ventilation are not the same as in room ventilation—their density is greater, and consequently greater draught capacity is necessary to remove them. Another thing-a fan cannot drive these gases out; they must be pulled out, and it is only when the foul gases are pulled out through flues of sufficient capacity that we get the properly ventilated cool kitchen, free from odors or deposits of grease, that we ought to have and can have just as easily as not if we go about it right. There is absolutely no excuse for any hospital kitchen not to be sweet-smelling and cool with the modern knowledge of how to do it and the available appliances with which to do it.

The second law laid down for us is that dust and dirt cannot remain in a place which is accessible to easy cleaning, provided we furnish the human energy to clean it.

The third law is that dirt is visible on a white surface, but is not so visible on a darker colored one, and the fourth law is that a smooth surface does not as readily form a resting place for particles of dirt as a rough one, and the harder that smooth surface is the easier it is to wash off.

A right-angled corner is not accessible, and consequently today we round them. Our walls are made of white tile, or hard cement painted white, or hard white plaster with white varnished paper, according to the size of our pocketbooks. Our floors we make of cement and cover them with tile or some special surfacing impervious to grease or damp, and absolutely smooth. So far no dirt can lay itself down to rest and offer an abiding place for tired microbes to recuperate and perpetuate themselves.

One thing remains, however—our floor cleaning, and here is where a radical change over the old formula takes place. In former days all kitchen equipment sat on the floor, and dirt accumulated below it and in the right-angled corner formed by the floor and the wall of the piece of equipment. Today we say everything must be 10 inches above the floor, so that we can take a hose and flush out the place. Only the range must remain solidly seated, and that is today raised, say, 4 to 6 inches above floor level, and given a concrete rounded base, so that the range sets on an island above the water used in flushing.

The apparatus necessary to the hospital kitchen varies with the size of the hospital, but it will always include a range, and, as that is the hardest worked item of the equipment, it behooves purchasers to see that they get something able to stand hard work day in and day out, with the minimum amount of repairs. Especially is this the case where natural gas is used for fuel, as is the case in many cities today.

THE KITCHEN RANGE.

To stand hospital work, a range must be built approximately as follows, any specifications less heavy and less exacting in workmanship being bound to cut down the wearing quality under the stress of continuous heavy heat:

For the body of the range, No. 12 gauge cold rolled steel, riveted to ½x1½-inch angle iron on each corner, should be used, and the steel should be flattened and leveled by hand before riveting to make a thoroughly good job. The ovens should have sides of not less than No. 10 gauge steel, closely riveted to front and back of range, and, unless the bottoms of the same thickness of steel are braced on the bottom with ½x1½-inch channel irons, riveted to the bottom of the oven and held by at least ¾-inch king bolts, the ovens are almost sure to warp after some little usage and then the whole range suffers.

All oven doors should have malleable iron frames, and should be capable of latching both partly open and close shut, and the doors should be braced so as to be capable of sustaining a weight of at least 500 pounds or over when flat open.

The front and back flues should be lined with 1-inch fire brick, and the end and bottom flues with not less than \(^1/4\)-inch asbestos mill board.

The fire box, if lined with fire brick, should have $6\frac{1}{2}$ -inch fire brick on three sides and $2\frac{1}{2}$ -inch fire brick on the oven sides, and should be fitted with revolving grates.

Wherever natural gas is available, it is always best to use a coal range fitted with natural gas burners, because the burners can be removed from the fire box in about ten minutes and the range used for coal in case of failure in the gas supply. There are not enough heat units in artificial gas to give satisfaction in a coal range, as a rule, unless a very large volume is used, but natural gas, with its large number of heat units, is cheaper than artificial gas, and much cleaner and more convenient than coal.

For heavy work the French top is always preferable, and the plate over each fire box should weigh not less than 90 pounds and have a 10-inch hole and cover. The plates over the ovens should be ribbed to stiffen them, and should be supported by a cast-iron ventilated brace placed on the top of each oven to prevent their warping. A top of this class will stand any amount of hard banging and heat without damage, whereas the lighter variety soon gets out of shape, cracks, and goes to pieces under the heavy duty of a hospital.

A range such as described above will have a net weight of over 1,350 pounds for each section, 4 feet x 3 feet 4 inches, and it may be taken as a generally correct principle that every pound of weight less for the same sized section of range simply means that much less durability.

Beware of the range which is praised because its ovens get hot quickly; it takes less time for heat to penetrate thin than thick metal, of course, and equally of course these ranges can not last as long. At the same time there is a point where the metal becomes too thick to properly transmit the heat, and ranges are not built in practice with oven walls more than No. 10 gauge steel.

In the purchasing of a range it is easy to be deceived unless the thickness or weight of metal and fire brick are specifically given. The pictures look the same, and the expression, "very heavy steel," means nothing more than does "heavy cast-iron top;" but that "the plate over the fire box shall weight not less than 90 pounds" means something, as do the other figures given above, and, with them before one, there is no excuse for being deceived by the glittering generalities of the glib salesman, whose goods at a cheaper price are always "just as good."

It does not need expert knowledge to know that if two sections of range of the same size differ from 300 to 400 pounds in weight, there will be a corresponding difference in the time they will stand the strain of every-day use, and, although one is less in cost than the other, its short life really makes it very much the more expensive in the end, besides the trouble and annoyance of stoppages for repairs.

THE STEAM TABLE.

Another item which goes into every hospital kitchen is the steam table, and here again cheap, trashy material can be "worked in" unless the

specific gauge of metal is specified. If a steam table water pan is to be made of copper, which is generally accepted as the best material, it is important that if the table is 5 feet long or less, the copper pan be 24-ounce copper; if the pan is of greater length than 5 feet, 32-ounce or heavier copper should be used. It is extremely inadvisable to have a copper pan inside a steel one, because if a leak occurs it is not visible, and the space between the metals fills up with dirt and damp, and rusts out the steel. It is better to have a steam table pan of copper, braced with angleiron supports at suitable distances; then any leak immediately is visible, and can be taken care of before any damage is done. Many cheap steam tables are made of a thin copper lining inside a steel pan; it takes only the dropping of a fork or some other sharp-pointed article to puncture this thin metal and the steel pan speedily rusts to pieces.

The weight of the copper determines the price of the table, and, when two tables of the same size vary greatly in price, look for the "nigger in the wood pile" at once, and he will be easy to find in the thickness of the copper, the bracing, and the workmanship.

Cast-iron panels, enameled with white German porcelain enamel, which is exceedingly hard and tough, are coming into universal use owing to the ease of interchanging them and their sanitary qualities. The German enamel is put on dry, in contradistinction to the ordinary enamel, which is put on the metal as a wet paste, and the former is much more expensive. A simple test of enamel is to put vinegar on the panel, when the wet process enamel will discolor, while the dry will be unaffected.

THE COOKERS AND STEAMERS.

A great deal of hospital cooking can be done in steamers, and the closed compartment steamer has the advantage of using dry steam and not allowing any to escape in the room, besides the assurance that no food in one compartment can absorb any odor from food in the other compartments.

The stock kettles and steamers should be set in a steel drip pan, properly drained, and it is advisable to have a canopy over it so as to carry off the heat and keep the steam and odors from the kitchen.

THE DISHWASHING.

The dishwashing should be done by power machines, of which several good ones are on the market, provided there are enough dishes to justify it, but, as a rule, the dishwashing is done in the ward kitchens and the dishwashing in the general kitchen is consequently negligible.

THE URNS.

Coffee urns should be very carefully chosen, because, owing to the strains of heating and cooling, coffee urns soon go to pieces unless built to a specification not less strong than about 35-pound cold rolled copper, thoroughly tinned on the inside. They should be mounted on cast brass or bronze bases, with feet at best 6 inches high, to prevent the attendants burning their hands when regulating the steam valves underneath the urns. When a battery is used, the center elevated water urn should be on feet which are attached to the feet of the other urns, and not to the bodies, so that one of the other urns may be removed for repair without putting the whole battery out of commission. Seamless copper steam coils should be used and should be tinned inside. All connections should be tinned inside, and the faucets should be silver plated and easily taken apart for cleaning.

Urns of these specifications will last indefinitely and give good satisfaction, but the cheaper urns, which cannot be built anywhere near these specifications at the prices asked for them, will soon warp and leak, and usually go to pieces.

THE KITCHEN TABLES.

Tables for clean dishes, vegetables, and pantry work are best made of 13/4-inch sectional maple, mounted on iron pipe legs. The cooks' tables are preferably made from polished steel, and when chopping has to be done on them a chopping board is used. The scrap table should always be made of galvanized iron, as there is then no trouble in keeping it sanitary. Under no circumstances should a scrap table be made of wood covered with metal, because the joints are bound soon to leak, and a filthy condition is created between the metal and the wood, as the damp permeates from the leaky spot over the entire surface of the wood beneath the metal covering.

For tuberculosis and contagious hospitals it is possible to install a method by which all the scraps of food as well as the dishes shall be sterilized before reaching the scrap tables and being handled by the attendants or put in the garbage. The writer does not know of such an actual installation, but has seen the plans for one which appeared perfectly simple and practical.

SOME CONCLUSIONS.

The kitchen is the department of a hospital where money can slip away faster, without the cause being detected, than in any other part of the institution. A badly planned kitchen necessitates extra help to get the work done, and one helper means an expense of not less than \$500 per annum.

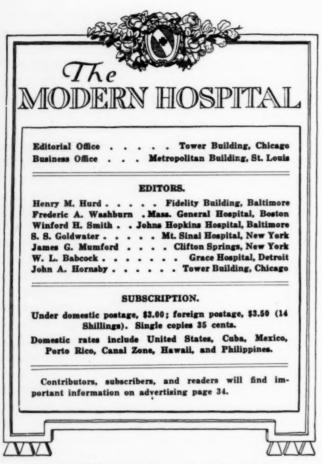
In too many cases the kitchen equipment plan is not made before the size of the kitchen is determined, so that usually there is not room for adequate equipment, or it may be wrongly located, so that efficient service cannot be got out of it.

From an economic point of view, the kitchen is the most important part of a hospital, yet in many cases nothing is done about choosing the equipment until the hospital is built, and it is too late to get the few extra feet of room, or the change of location of a door, window, or flue, which changes may mean the saving of daily expense as long as the hospital exists—all because, why? Because we have been trained to think that kitchen equipment is a thing you go out and buy, bring in, and set up on the floor like chairs or tables, or any other furniture. We don't wait until the hospital is finished to buy our plumbing. We don't wait until the hospital is completed to order our electric lighting system. We design these systems when we design the walls, and we let the contracts for them when we let the contracts for the building.

But the poor kitchen, except in occasional cases—happily becoming more frequent every day—waits, and no provision is made for the large number of water, steam, and drainage connections whose location cannot be determined unless the equipment has been specified and definitely decided on, and the hospital has to pay the added cost of installation caused by the cutting of holes in concrete floors and running pipes to inconvenient connections instead of having all connections roughed in during construction, as is invariably done for the plumbing, gas, and electric contracts.

Flues large enough to properly ventilate the kitchen and carry off the smoke are the exception in the average hospital plans, because the usual laws for ventilation do not apply, and the designer of the flues is not posted on the peculiar idiocyncrasies of kitchen vapors. The ventilation question can easily be threshed out before the hospital is built, but it is quite another matter to enlarge a flue already in or to put one in where it was forgotten.

With the exception of a few specialists, the average architect cannot be expected to know everything that is necessary to the proper designing of a kitchen equipment, and the architect should call in one or more equipment houses of high standing as his advisers. The board of trustees should meet with the representatives of these houses, and should decide on the best plan and the best equipment, and make the contract the same as they do the other contracts for the building. Only in this way can really satisfactory equipment be secured and a plan decided insuring economical operation of one of the most important departments of a hospital.



Pupil Nurses a Hazard to Patients.

Dr. D. S. Fairchild, of Clinton, Iowa, one of the best known surgeons in the West, recently stated in a medical paper that patients were being sacrificed in the interest of nurse training in his home city.

Dr. Fairchild, who is one of the vice-presidents of the American Medical Association, president of the American Association of Railway Surgeons, and editor of the journal of the Iowa Medical Society, was promptly refused admission to the hospitals of Clinton, and the hospitals, nurses, and some of the members of the medical profession had a good deal of hysterics about the doctor's charges.

In a final analysis, becoming angry with Dr. Fairchild will not disprove any of the charges that he has made. It seems to us the question is whether what he stated was true or not—namely, that the training of nurses was a hazard to patients, and, if the charges are true, whether there is a cure for the situation.

It is very certain that the training of pupil nurses, coincident with the care of patients in hospitals, is an extra hazard to patients, and it is quite as certain that many patients lose their lives every year at the hands of pupil nurses, but it is not so sure that there is a cure for it. These nurses must be trained, and they must be trained in the handling of patients; therefore, they must handle patients, and no pupil nurse can handle a patient as well as a trained graduate nurse, of course; therefore, it goes without saying that patients are not getting the best care that could be provided for them when they are in the hands of a pupil nurse. It seems, therefore, that Dr. Fairchild's charges are entirely true that pupil nurses are a hazard to patients, and many will be in entire sympathy with Dr. Fairchild's attitude in drawing attention to the matter.

We are entirely too careless in the operating rooms, and too many pupil nurses are put into operating rooms who are too stupid ever to learn operating technic, too many who are too careless, and who have not been long enough in the school to have acquired the proper mental attitude toward the profession of nursing.

The operating room and the maternity department are two sections of the hospital where lives are at stake every instant, and a wrong step can be taken by a nurse before anyone can interfere, whereas in most of the other departments of the hospital there will be time enough after the nurse makes a mistake to see to its correction.

It is presumed that it was Dr. Fairchild's idea to call attention to this matter of nursing care in order that it might receive more attention than it had been receiving. If some of the hospital superintendents who have stopped long enough to abuse Dr. Fairchild for his charges, and if some of the trustees who have barred him from their hospitals would spend as much time thinking about whether his charges are true or not as they have in abusing him for making them, more good would be accomplished.

Maternity Hospitals.

A good deal of activity is developing in various parts of the country about maternity hospitals. Many are proposed, and the question of the value of this class of institutions is a common topic among hospital people and health workers.

It isn't very long ago since the name "maternity hospital" was a reproach to a community and a stench in the nostrils of decent people. These institutions were abortion shops, or, at best, places where unfortunate girls were sent to have their illegitimate babies, and the managers of them often represented a most pernicious form of blackmail operated against the supposed fathers of these illegitimate children. These places were often connected with commercial baby farms, and were the nucleus for a traffic in infants that frequently showed itself as a form of blackmail against husbands who were in trouble with their

wives, or who were being made the scapegoat of unjust charges brought by girls under the insidious influence of these hospital "doctors" and managers. Too often these institutions were the sources and fat feeding grounds for "white slavery;" unfortunate girls who had got rid of their babies were passed along to the underworld for immoral purposes. Many of these institutions exist today in nearly every community, and are quite as bad as they were in the old days.

But things are getting better. The villains engaged in this kind of commerce are being driven out of business, and where they still persist their activities are lessened by the scrutiny of health officers and welfare workers.

All this ignominy clouded over maternity hospitals has not hidden the fact that these institutions, honestly conceived and properly operated, are perhaps the most valuable assets in our modern sanitary regime. There is no doubt that many thousands of women are handicapped for the rest of their lives, some of them rendered sterile, and others made chronic and incurable invalids, by incompetent doctors and ignorant, filthy midwives at the time of their first confinement. It is probably true that more than 50 percent of women suffering from incurable endometritis, pelvic ptoses, and unremedied perineal lacerations are thus invalided as the result of incompetent care at the time of confinement. Some months ago we published part of a report made by Miss Van Blarcom, of the New York Commission for the Prevention of Blindness, in which it was stated definitely that 50 percent of the blind owe their misfortunes to incompetence and carelessness at the time of their birth. Conservative obstetricians and pediatricians agree that, at any rate, from 20 to 30 percent of blindness is due to this cause.

It can well be conceived that, in view of what we know about the harm that these institutions have done, and the harm that has come from incompetent care of child-bearing women and newborn babies, the task of creating good maternity hospitals is perhaps the most worthy that good women and wealthy men can engage in today. The maternity hospital is one of the very few classes of institutions in which specialization is really demanded. If there is ever a time when a woman should be free from possible infections and away from their source, it is at the time of her confinement; and the new-born baby is probably never so receptive to insidious infections as at the moment of and immediately following birth. Therefore, unless the maternity section of a general hospital can be most carefully isolated from the other divisions, and unless a technic can be

instituted that will meet the highest obligations of this day of medical science, it is better that these hospitals should be entirely separate and distinct institutions, removed from possibilities of contamination by people suffering from infectious diseases of all kinds.

New York has recognized this by the institution of the New York Lying-in Hospital, the Manhattan Maternity Hospital, and the Sloan Maternity Hospital, and the other hospitals of New York have recognized the propriety of such an arrangement by sending their maternity cases to these two hospitals. These hospitals, in turn, have recognized their further obligations to the community by giving periods of obstetric training to the pupil nurses of the general hospitals of the city. This course should be pursued in every large community; in fact, no maternity hospital can give a complete training to the pupil nurse, and arrangements for affiliative service should be made everywhere. General hospitals should be more than glad to participate in these affiliative arrangements and to serve the maternity hospital by permanent agreements that will assure to these institutions plenty of senior-year pupil nurses.

Let us have more maternity hospitals, but let us have them right, so that they can live down the reputation of the past and so that they can take the best possible care of the most dependent, helpless, and valuable classes of our people.

A Need in Tuberculosis Hospitals.

During the past four months I have had occasion to visit, for one reason or another, fourteen tuberculosis hospitals. Some of these were conducted by states, some by municipalities, and some by private philanthropy. One condition that I found dominant in nearly all these institutions seems to me to justify comment. In every single case I found that these hospitals are giving good care to their patients; patients are well nursed, well fed, and their medical requirements are attended to along the lines laid down for the treatment of tuberculosis by approved scientific methods.

In five of these hospitals visited I had occasion to make an official inquiry that necessitated the taking of testimony along certain lines from medical officers, heads of executive departments, nurses, the lesser employees, and patients. In one or two cases there had been rather irresponsible charges of neglect of patients, in one form or another. These official inquiries gave me an opportunity to ask questions that would not have been possible under other conditions. In no single case did I find the charges of neglect supported

by anything like unbiased testimony; but in every case I ascertained why the charges had been made, and I was able to draw conclusions as to the merits of the charges.

Without naming any institution and without going into detail, I think it might be profitable for me to give, from memory, the testimony of a typical patient witness. A number of questions were asked, bearing on the specific case, and then the following dialogue occurred:

Question—Are you happy here? Answer—Why, yes; I think so.

Question—Do the officials and employees do all they can to make you comfortable and contented?

Answer—Yes; I think they do.

Question—You are an up patient, I believe you said?

Answer—Yes; I have had no temperature for some time and I am up all day.

Question—Won't you tell me what you do with yourself? Give me the history of your life for an average day?

Answer—I get up in the morning, wash and dress, and then have breakfast; then I sit around awhile and occasionally walk out into the woods; then I come back and have dinner; and then I sleep a little while, if I can; and then I sit around awhile and then I have supper; and then I sit around awhile and go to bed.

Question-Don't you read any?

Answer-Yes, when I can find something to read.

Question—What other diversion do you have? Answer—Nothing that I can think of just now.

Question—This seems a beautiful place to live, and it would seem that you ought to be really happy here. Are you happy and contented?

Answer—Yes, but it is very lonely; sometimes I can hardly stand it.

Practically these questions were asked of more than fifty patients and almost invariably there were the same answers. I knew the answers I would get the moment I looked at the patient. The same general answers were given by employees and nurses and the help. They were all happy and contented, but they were all "very lonely," and, when they were not performing some duty or doing some routine thing that they had done every day of their existence in the hospital, they were doing nothing, and were "very lonely."

Most of these hospitals are removed from the lively, busy places of life; most of them are surrounded by beautiful country; most of them have trees and flowers and lawns; many of them have water about them. In very few instances are the patients allowed to go into the villages or associate with the neighbors.

Medical men in the cities, visiting and district nurses and dispensary officers, claim that they are unable to persuade patients with incipient tuberculosis to go to the tuberculosis hospitals and stay there until they get well. In many cases they go for a short period and leave. Why is this? I have found out the secret.

Absolutely nothing is done in these hospitals to afford patients entertainment, diversion, and occupation. It seems to me that nearly all these hospitals have too many doctors, and that these doctors do almost nothing that the nurse in the case could not do. There is usually a hard and fast rule for the treatment of these patients. If they have a temperature, they are kept in bed and they are given a certain diet. If they have no temperature, they are allowed to be up and are given another diet. Some of them are given a little medicine, but these medicines are routine practice, and the nurse attends to giving them in most cases and generally determines when they are to be given. The doctors go about and make an occasional examination of the lung or the region of the active process, and they may leave a general order about the patient. This happens, as a rule, about once a week. But absolutely nothing is done to divert these people and keep them contented. The result is that they all are "very lonely," and they leave the institution as soon as they possibly can, and some of them leave long before they ought to do so.

If the conditions in these tuberculosis hospitals are as I have given them, and are as I think I found them, do not the facts point to the necessity for a very great revolution in the care of tuberculosis patients in sanatoriums?

It seems to me that in every tuberculosis hospital there ought to be someone with the specific duty of directing the entertainment and diversion and occupation of the patients, and this work should not stop with patients. It ought to include the officials of the institution and the employees and the nurses. Many of these hospitals have farms attached to them and dairies and poultry flocks, many of them have large sheets of water adjacent to them, and many of them have forests all around them. Some of these patients, of course, are confined to their beds part of the time, some of them all the time, and some of them sleep in the forenoon and afternoon for want of something better to do.

We have come on a time in the treatment of tuberculosis when medical science has decided that useful occupations in the open air are good for some of these incipient patients, and it seems to me the work of physicians should include the prescribing of the character of occupation and the amount that each patient should do. In a few institutions they are already asking patients to do a little work about the place—some of it out of doors. In three institutions that I visited I found incipient patients were asking to be allowed to work in the garden, among the flowers, or in the truck garden with the vegetables.

Why cannot a regular scheme of occupation and diversion and entertainment be introduced in these hospitals? Each institution could have a professional entertainer—at least someone who could be charged with the specific duty of finding diversion and entertainment and occupation for everybody. The person so chosen must of necessity be good-natured. He or she must never have "the blues." He or she must be versatile and accomplished in many things, so that a great diversity of things to "do" could be instituted. Such an entertainer as I have in mind, it seems to me, would best be a woman, of large sympathies, and one of broad imagination. Any special training that she had had would be an advantage, and the more education she had had the better would be her service. She could think up places to get reading matter for bed patients, and she could find someone who could read to bed patients occasionally—young women in the office, for instance, or the storekeeper or the housekeeper, or a nurse; she could have games, such as checkers and dominoes and cards, for bed patients; she might have cribbage games for some of them, and those who did not know how to play could be taught; she could have chessmen, and get up little tournaments and offer little simple prizes that some of the patients could make. She could take the up patients walking in the woods, and equip herself to entertain them with nature stories and furnish them with the literature that would enable them to study nature—the woods, the flowers, the birds, squirrels, and rabbits, and even the ants and bugs. These jaunts could be made most interesting and entertaining.

For incipient cases, congenial occupations could be found, and the doctors could prescribe the number of hours and the character of work that incipients could do. A great many of these people would like to be charged with the care of parts of the garden and be responsible for the thrift and growth of their parts, and they could be made to take great interest in that kind of work. Then, for everybody alike, evening entertainments could be gotten up, such as little theatricals or charades, and those who were in physical condition to do so could participate in these little festivities; and they could have rehearsals, which would be even more "fun" than the formal entertainments themselves. The officials of the insti-

tution and the nurses and employees could be made to take an interest in such entertainments if they were properly exploited and given the right sort of a setting. A few tuberculosis hospitals have already recognized this great need to the extent of giving an occasional moving picture show. These are excellent in their way, but they come only at long intervals, and what are the people to do in the meantime?

If some institution will take up this matter of entertaining and diverting and giving occupations to the people, they will find that it will pay in many ways; they will have less trouble finding employees, and their employees will stay with them. They will soon find that incipient patients will come to their hospital and will stay there, and they will not have to complain, as nearly all of them do now, that they are unable to keep any except advanced cases, because the others go back home.

JOHN A. HORNSBY.

Our Cover Design of the Massachusetts General Hospital.

Heretofore it has been the custom of THE MODERN HOSPITAL, with a few exceptions, to picture on the front cover some new hospital which, for one reason or another, seemed entitled to special consideration. This policy will be subject to variation in the future, and occasionally we shall present pictures of famous institutions in all parts of the world. This month we present the famous "Bullfinch Front" of the Massachusetts General Hospital in Boston. This magnificent institution, next to the oldest in the United States, was founded in 1811. Its records tell the thrilling story of American medicine for more than a century, and the brightest page of them all would chronicle that momentous day, October 16, 1846, when ether was born. On that memorable day, probably the greatest for suffering humanity since that other day on Calvary, John Collins Warren did a surgical operation on one Gilbert Abbott after he had been put to sleep by William Morton by the use of ether made by Dr. Morton.

Oliver Wendell Holmes coined the word "anesthesia" to define the sleep, and later on Weir Mitchell wrote of it these pregnant lines:

"Whatever triumphs still shall hold the mind, Whatever gift shall yet enrich mankind, Ah! here no hour shall strike through all the years, No hour as sweet, as when hope, doubt, and fears, 'Mid deepening stillness, watched one eager brain, With Godlike will, decree the Death of Pain."

Every year since 1911, on October 16 there is "Ether Day" celebration in the Massachusetts General Hospital, and some famous scientist is

chosen to deliver an address. Wm. H. Welch, the father of American Pathology; Simon Flexner, whose discovery of a cure for cerebrospinal meningitis marks almost as great an epoch as "ether"; Rosenau, one of the most brilliant of our younger men; and Crile, of Cleveland, an epoch maker in history, have been the orators.

The fine old institution has kept up its leadership all these years, and has carried the banner of progress into far pioneer fields—out-patient service, follow-up, and "end results" practice; occupation and reeducation for the handicapped, the designing and use of new methods and new equipment. So that we are proud to present this month a picture of that masterpiece of architecture, the Bullfinch Front, known wherever hospital architecture and efficiency are known.

The Dollar Yardstick in the Hospital.

In other pages of this number of THE MODERN HOSPITAL will be found a paper by Mr. Frank B. Gilbreth on "Scientific Management in the Hospital." This paper was prepared for reading before the American Hospital Association at the St. Paul meeting. It is published at this time because it contains many hints for hospital administrators and students of hospital problems that will prove extremely valuable, not the least of which is a hint that Mr. Gilbreth and other scientific management experts who are looking for business in the hospitals utterly fail to visualize the fundamental purpose for which hospitals are conducted. Mr. Gilbreth belongs to that class of whom one of the participants at St. Paul gave the following dialogue:

Expert to superintendent—"Well, how is our new system working?"

Superintendent-"Working fine."

Expert—"And do you find the hospital doing better?"

Superintendent—"Oh, we closed the hospital three months ago so we would have time to work the system."

As a matter of fact, Mr. Gilbreth, while writing around the hospital, is constantly thinking about a commercial workshop, where time and material and labor are measured solely by the yardstick of dollars and cents, and where a given output, when not profitable as against competitive wares, will be cheapened or closed up.

At the Atlantic City meeting of the American Medical Association Mr. Gilbreth read a paper before the joint session of the sections on Hospitals and Surgery, in which he described somewhat in detail a plan of "motion management" for surgeons doing surgical operations; he would have

surgery standardized, so that every surgeon would do an operation in precisely the same way—with just so many strokes of the knife, so many motions of the wrist, and so many bends of the elbow, after having planned the operation in detail the night before.

Of course, Mr. Gilbreth is fundamentally wrong, and fails entirely to reach the mark in his conception of things in the hospital world, but there are several bits of advice in his paper that make it worth while.

More About Twilight Sleep.

In other columns of this number of THE MODERN HOSPITAL will be found a short paper by Dr. Joseph B. DeLee on the "Daemmerschlaf," or twilight sleep, of the Freiburg clinic. Many of the best men of the country have taken exception to the editorial in the last number of THE MODERN HOSPITAL, suggesting that maternity departments in general hospitals and the maternity hospitals should be prepared to carry out the technic of this obstetrical practice for the physicians in their hospitals.

The Modern Hospital offers no excuse for its attitude. We believe that medical practice is wholly within the province of the medical profession, and it is not intended to open up technical questions in The Modern Hospital; but we do feel that there is a difference of opinion on this subject, and that that hospital will be best, and will best serve the interests of the largest number of its medical staff, which is capable of handling any technical procedure in its several departments that may be called for by reputable men. To that end Dr. Knipe's paper had a definite value, and also to that end Dr. DeLee's paper has a value.

It may be added that Dr. DeLee's paper was written at the express and urgent request of The Modern Hospital, because it was known that he had been in Freiburg, had had opportunity to see what was being done there, and that he had not been favorably impressed with what he saw; and it was deemed advisable that Dr. DeLee's opinion should be placed side by side with that of Dr. Knipe before the same audience that had read Dr. Knipe's paper and the editorial that accompanied it.

The next Legislature of Minnesota will be asked by the State Board of Control to appropriate \$75,000 for a reception hospital at the state sanatorium for consumptives at Walker. The building would be used for the classification and observance of new cases and for general hospital purposes. According to the Minneapolis Journal this move will mark a change in the plan of the Walker sanatorium. The institution was founded with the view of treating incipient cases, but Dr. George W. Beach, the superintendent, says that few incipient cases are received. The cases are seldom discovered in their incipient stages, and when they are it is difficult to get patients togo to an institution.

MORE ABOUT TWILIGHT SLEEP.

Its Universal Adoption Would Be Followed by Appalling Mortality and Morbidity—Favorable Reports Not Justified.

BY JOSEPH B. DE LEE, M. D., CHICAGO.

In November of last year I spent several weeks in Freiburg, and had many opportunities to study the cases in the free wards at the University clinic. I went there a skeptic and came away more skeptical, but I gave the intern, Dr. Siegel, who kindly permitted me the freedom of the delivery room, every chance to prove the value of the method. It was possible for me to follow about ten or twelve cases through from start to finish, and I saw several more at intervals. It may have been, as Dr. Siegel explained, only chance that made five of the cases operative. There were during my short stay four forceps and one craniotomy. Two of the forceps cases were strong peasant women, in whom I had noticed the paralyzing effects of the injections. Both had had strong, regular pains, and, in my judgment, from appearances and the results of examinations recorded by the interns, both should have had spontaneous deliveries within ten hours. In both, however, the pains weakened decidedly and labor lasted until the next day. Rotation was found to be arrested, when finally the forceps had to be applied -one because of threatening danger to the child, the other because of protracted labor. Both deliveries were laborious and attended by extensive lacerations. second patient had a severe post-partum hemorrhage, controlled with difficulty. One child had convulsions, and left the hospital still having them. In another case the labor lasted nearly thirty-six hours, again a powerful peasant, and pituitrin had to be given because of the danger to the child; then the pains became so strong that ether had to be administered, but, in spite of this (the patient was very unruly), a deep laceration down to the rectum and far up both sulci resulted. Since the skin was not torn, this laceration was not sutured. Several other cases required pituitrin to effect delivery.

The case of craniotomy was a patient who had had hard previous deliveries, and, if nature was to be trusted to force the head through a narrow pelvis, the scopolamin-morphin treatment was certainly out of place. The pains at once weakened under the influence of the drugs, and on the third day afterward fever arose, which forced the intern's hand. The time for a child-life saving operation being passed, delivery from below was attempted, but had to be effected by craniotomy. This is a death, in my opinion, chargeable directly to the method. One other forceps I saw in the amphitheater, a case, it was said, brought in from outside. The other was an uneventful operation done by a "prakticant."

The child often shows evidence of distress, such as rapid heart tones, but these are not regarded seriously unless they keep up, become irregular, or the symptoms appear near the end of the second stage. The apnea in which the children are born is not alarming to one who has observed the same in Cæsarean sections. A few of the children required restorative measures, but the state of the children, in the cases I saw, would not condemn the method. The danger before delivery requiring forceps and pituitrin impressed me as serious.

The matter of lacerations, also, was important. After delivery the placenta is expressed as gently as possible, so as not to awaken the woman, and there is a tendency to neglect a careful inspection of the birth canal for injuries for the same reason. In order to study the local

conditions properly, it was necessary to give a general anesthetic, which the attendant was loth to do. In three cases labor was delayed somewhat, but terminated happily in a reasonable length of time. Indeed, I had to admit that when the method worked well it was ideal. The condition of the patient after delivery was not much different from those we observe in our own wards. Those who had operative deliveries or sutures were sore and tired; those (multipara) who had had easy labors, cheerful. Intensive use of suggestion is made in the recovery wards, and the reply to the stereotyped question could hardly be otherwise than favorable.

The proper conduct of the treatment requires a large force of physicians and nurses. The fetal heart tones must be noted constantly, and the patient may not be left alone, especially if delirious. In one of the cases the heart acted poorly for a while, but not enough to stop the treatment.

The method is one that may not be practiced in the home. Its general adoption throughout the country would result in an appalling infant mortality and an enormous maternal mortality and morbidity, and this is the reason I consented to write an opinion for the Ladies Home Journal. In a properly equipped maternity and in the hands of expert obstetricians, these drugs may be administered with a certain degree of safety, but the cases must be selected with exceedingly great care, and a man capable of his task must be within instant reach all the time. Even then the mother will often have to pay the penalty of extensive injury for her relief from pain.

Naturally, in my farther travel in Europe, I inquired about the employment of the "twilight sleep" in other clinics. Prof. T. W. Eden, of London, who was with me in Freiburg, had so little faith in it that I could not induce him to cross the courtyard to the confinement room to witness the cases there in labor. He spent several days studying mesothorium and x-rays in cancer, but would not accompany me to see the "twilight sleep." They had tried it, he said, and discarded it. At Heidelberg, Berlin, and Munich it was the same story. Gauss himself had gone to Dresden to demonstrate the method in Leopold's clinic, and could not convince that genial, yet astute, clinician that it was safe or practical. In Vienna, also, it was tried and found wanting.

This accorded with the experience, twelve years ago, of myself and other American accoucheurs. Perhaps with the new narcophin (we used morphin) and improved scopolamin we would get better results, but I doubt it. I am willing, however, to try it again, and in the new Chicago lying-in hospital now under construction, where I will be able to give the patients my own supervision, I may experiment on a series of carefully selected cases.

Among the reforms ordered by the new state board of insanity of New York are the following: No more secrecy or mystery about the care and treatment of the insane, the institutions to be put on the same public basis as a general hospital; immediate probing of all sudden deaths among patients; no staff appointments of physicians who have not had previous experience in caring for the mentally ill or who have not taken some special courses to fit them for the position; the standardization of the examination of patients; and the extension of outpatient work. Arrangements have been made with the psychopathic department of the Boston State Hospital to give special courses of from three to six months to physicians who desire to qualify themselves to meet the new requirements for staff positions. Such physicians will be treated as interns. They will receive no salary until the course has been completed, but their instruction and board will be free.

RAISING HOSPITAL FUNDS—ITS EDUCATIVE VALUE.1

Information Concerning the Broad Service of the Hospital in Preventive as Well as Curative Medicine Must be Disseminated—Philanthropists and the Wealthy Must be Taught the Pleasure of Giving—Every Agency Must be Employed for Publicity.

BY REV. A. E. CLEMENT, COMMISSIONER GALLOWAY MEMORIAL HOSPITAL, MEMPHIS, TENN.

The hospital, as an enterprise, occupies a unique position in its service to God and to humanity. The spiritual possibilities of man and the proper training of his mind have been emphasized for years, and properly so; but, after all, the mind and soul are so largely dependent on man's physical condition as to place the hospital work in the same class with educational and other religious movements. Moreover, the frightful cost of preventable diseases alone, approximating for the United States annually \$1,500,000,000, easily places the hospital among the great financial assets of the nation. As Christians we have too long ignored our responsibility for the sickness and destitution of our brethren who struggle on against disease and poverty. The clock has struck the hour of an awakening conscience, and a new future, fraught with hope to suffering humanity, is before us.

One of the most optimistic signs of the times is the increase in the year's monetary benefactions. It is reported that on this side of the water the year's increase was \$66,000,000 above that of 1912, reaching for the year 1913 the rough total of \$350,000,000. While more than half of this sum was given for educational purposes, something like \$100,000,000 was donated for scientific-sociological work, embracing hospitals, homes, and relief for the sick and helpless poor. Hospitals, then, in their various lines of service, are coming more and more to be regarded as safe

channels for benevolence.

Over against these splendid benefactions for the protection of human life stands the alarming absence of that community knowledge necessary to build an impregnable bulwark of defense and stamp out the encroaching enemies to perfect health. In her book, "Social Work in Hospitals," Ida M. Cannon staggers us by this statement: "When we realize, as we may some day, that sickness is the usual attendant of ignorance, neglect, or immorality, either on the part of the individual or of the community, our point of view may change and we may cease to be so complacent about our diseases."

Here is, therefore, a double field needing cultivation on the part of our hospital forces. The general public should have brought to its attention the full import of the hospital in its curative and preventive work, and the philanthropist should have its possibilities of service wisely pressed on his already yielding conscience. Both are busy, and have to be brought face to face with the exact facts, and be made to really know the sufferings of their fellows. Our task is to bear the information, that both the general public and the philanthropist may be aroused to their full duty.

The general public does not understand what is meant by a "thoroughly equipped hospital." Too largely the hospital is thought of as a boarding-house for sick people; few conceive of it as also a plant for scientific research and service, whose benefits reach the rich and poor alike. The hospital stands for the study and solution of the problems of disease, and for scientific advantages to its patients under the care of specialists in medicine and nursing. It should be made plain that the privilege of the clinic promises a better trained medical service for the people, and that the preventive methods there employed benefit sections far removed from hospital walls. Last, but not least, it brings its strength to relieve the sufferings and consequent poverty of the poor who, in village and country sections especially, are miserably dragging themselves into a premature grave, not even knowing that a cure is possible. The public should have this information; it is all but criminal to withhold it longer.

In the matter of publicity, many believe that the most effective agent is to manage the hospital well—so well that its service will be forced on the attention of the public. This is one of the best means, to be sure, and without it all other efforts will be fruitless—a shameful advertisement of our failures. If we rest content with this alone, many will suffer and die in ignorance of a possible cure, and at the same time the philanthropist will pass on, oblivious of what he might have done and would willingly have done for suffering humanity had he but known. How much better to scatter the information and save both!

tion, and without it we should be all but helpless; we should use it freely. The daily paper, however, prints so much useless and sensational matter that much of its valuable information is buried beneath a deal of rubbish. Many of our leaders are turning to more condensed and special periodicals to convey to the world their choice information and best thought. But these do not reach the masses, and, if they did, their technicalities might confuse the ordinary reader and deaden his interest. Such articles should be popularized and given to the great daily papers. Much of the average man's mail today is laden with cheap

The press is powerful for the dissemination of informa-

circulars, bearing no special message, which find their way to the waste basket, as they deserve, but with these may go, unfortunately, many of the valuable circulars which we send out explanatory of our great cause and its plans.

Information so valuable as that which we bear must find, in addition to good service and the press, other means of dissemination. To my mind none is so fraught with power as the personal approach, strengthened by the added touch of an influential and sympathetic friend. On this point we might well learn a lesson from the ward politician, who never blunders into unwise appeals. He studies the men within his precinct, and uses only those whose influence will surely "land" the uncertain vote. By this same method let the hospital be brought to the direct attention of every representative man; then he has an opportunity to raise objections and have his queries met. This plan enables the solicitor to impart full information and apply it to the individual thinking of the citizen. Besides this, when the solicitor can secure a subscription, it always enlists the subscriber as a permanent friend of the institution and a missionary to promote the cause. Months after the solicitor has gone, the good effects of his efforts remain and a regular flow from the educative work comes into the hospital.

Furthermore, the personal appeal bears an added strength in its ability to win the hearts of the donors. Some have no further thought than to secure the money needed for the hospital service, forgetful of the fundamental truth that—

"Not what we give, but what we share—
For the gift without the giver is bare;
Who gives himself with his alms feeds three—
Himself, his hungering neighbor, and me."

In developing the character of Sir Launfal, Lowell properly places the giver first, before the recipient of the proffered crust and the Christ, for He Himself said, "It

¹Read at the sixteenth annual conference of the American Hospital Association, St. Paul, August 25-28, 1914.

is more blessed to give than to receive." What higher motive could prompt one to action than a desire to enlarge the heart of the giver, and that for greater achievements? When once the heart of the donor is reached, and the joy of giving is felt, a continuous yield will be the result. We are indeed laboring unwisely and in vain when we gather the last possible harvest from an impoverished soil.

In this approach the smaller offering, for its educative effect, enlisting all, both young and old, should be faithfully sought. The average contributors should have wellmatured plans before them, for they usually guarantee success by creating confidence for larger gifts. It is generally understood, however, that bequests and large donations complete the plant and furnish the endowment for our hospitals. In securing funds, and in the collection of all subscriptions, which must never be allowed to grow old, it is well to remember that there should always be an atmosphere of generosity, freedom, and sincerity, and a full expression of appreciation of all donations. This latter point is essential if we would make and hold friends for our institutions.

It would be well for each hospital to build up a culture circle of a hundred or so carefully selected liberal givers, to whom information can be sent informally, with an occasional personal letter. These communications should not leave the impression that they are for immediate results. It is a plan to get the necessities of the hospital squarely before them and make of them friends for the institution, so that when an emergency arises they can be depended on to tide it over the shoals. Some such a corps must be cultivated and brought to stand behind an institution if it is to succeed.

In the work of solicitation for the cities, the best plan is the ten or fifteen days' whirlwind campaign, preceded by a complete organization of forces; but in the smaller towns and available country sections, where enthusiasm is difficult to be generated, it is better, though more expensive, to employ solicitors who are familiar with the methods of work, and who possess the knowledge necessary to move committees to action. The country needs the information incident to hospital service as well as the city, and the people should be made to feel themselves a part of such a mighty force.

But whatever fields we cultivate or the motive prompting us, whatever the educative work done or the methods employed, our cause is one that must ever be recognized as worthy-our knowledge of the facts must be commanding. It should be borne in mind that men who know their own business perfectly may not have caught our vision. must be led to the heights, and be made to see and know the opportunity as theirs. Both the general public and the philanthropists should thus be kept in active touch with the work, and their willingness urged, but patiently awaited. Faith in God and in the inevitable outcome of our cause, and an abiding confidence in men, will bring the desired results.

Health Officer Landis, of Cincinnati, advocates the establishment of a school for handicapped children on the grounds of the new Cincinnati General Hospital. In a weekly bulletin of the health department Dr. Landis contends that these children can be given an industrial training fitted to their abilities as well as medical attention in open-air environment. Selected cases could be taken from their homes and kept at school under hospital supervision for a period of years, or until they become trained to some industry by which they may become self-supporting, says Dr. Landis. Others would be transported to and from their homes and school, where they might be given a common school education, industrial training, and medical attention in an open-air environment.

SCIENTIFIC MANAGEMENT IN THE HOSPITAL,1

Work Should Be Apportioned Out to Those Best Fitted to Do It-Time Is Lost by Giving Work to Untrained Hands-Hospital Work Capable of Accurate Measurement and Standardization-Workshop Rules Are Applicable.

BY FRANK B. GILBRETH.

It is impossible to give in a paper of this length much idea of a plan of management that takes as long to learn as it does to learn medicine or surgery.2 Scientific management might be, perhaps, better defined as measured functional management. It rests on the principle of applying accurate measurement to present practice, deriving from the results of this measurement and the observations made while taking it the standard practice, and so dividing the work to be done that the standard practice may be carried out by those best fitted to do each part of the work. These being the underlying principles of the science of management, it is obvious that they are applicable to all fields of activity, and our investigations prove conclusively that the hospital can avail itself of this science with greater results than have been obtained in the industries, where the science was first discovered and ap-

It may be difficult for you, who are primarily interested in the hospital, to realize this fact, for the reason that most of the books as yet written on the subject of scientific management are written in the vocabulary of the shop. At first reading you may find difficulty in transferring the things there stated into the vocabulary of the hospital. However, having spent years of study in the theory and practice of management of the industries, and having also spent years in observing hospital practice and in studying hospital problems, we are able to tell you with authority not only that the same laws which govern efficient shop practice also govern efficient practice in the hospital, but also that many of the problems involved are not only similar, but identical, and that many of the solutions which we have found to those problems in the shop can be carried over bodily into the field of hospital management. The problems of transportation; problems of assembling; problems of enforcing and maintaining system, order, and discipline; problems of motion study, time study, and standardization; problems of teaching; problems of synthesizing these elements into methods of least waste-all may make two apparently dissimilar and unrelated lines of activity so closely akin that a successful solution in one case can be applied with little or no change with equal success to the other. You can recognize at a glance that all of these problems stated are to be found in hospital management, and that it may be possible for you to save much time and effort by becoming acquainted with efficient practice in the industrial world.

At first glance the hospital offers a particularly difficult field for scientific management, the reason being the difficulty in determining units of measurement. As a matter of fact, the problem of the hospital is less difficult than that of the industries, because of the fact that the field contains a larger percentage of highly educated men and women, who are, therefore, better able to appreciate the scientific method applied to their problem. Moreover, hospital workers have not been led to the false belief that "small individual outputs are best for all workers, be-

¹Read at the sixteenth annual conference of the American Hospital Association, St. Paul, August 25-28, 1914. ²"Psychology of Management," Sturgis and Walton, 31 West 27th street, New York City.

cause small outputs make more work for all." Again, hospitals do not have the fierce financial competition for existence that the average business has, that makes it frequently necessary that all changes shall immediately, as well as ultimately, be financially profitable. It is natural that scientific management should be developed first in the industries where the pressure of the need for survival is most forcibly felt. By the same reasoning it will go into the hospital last, for when they "run behind in the hospital and need more money, they just go out and get it." Again, in the average hospital the various departments are not so closely related but that one or more can be subjected to scientific management, and features can be installed without seriously affecting the others. This allows not only of ease of attacking the large problems at several points, but of standardizing the separate results, and of installing the successful methods with no loss of time in other departments.

There are several concessions which you must make at the outset before you can expect to do any valuable work in introducing the science of management into the hos-

nitals.

The first is that you must submit to having accurate measurement applied to your present methods and practices. You must recognize that for ages there has existed a disinclination, not only on the part of surgeons and doctors, but on the part of all those connected with the hospital, to allow their work to be inspected and the methods and the results to be measured. This accurate measurement for the purpose of analysis of methods into their elements, and synthesis of the least wasteful elements into a standard, is the absolute prerequisite of any further work, and you must make up your minds to submit to it at the start, and not consider such accurate measurement an impertinence or as unprofessional.

The second concession that must be made is in the willingness to allow a man not trained either in surgery, medicine, or hospital management to apply the measurement and determine the resulting standards. This necessity is a question of the present only, or of such time as hospital managers shall have received training in the science of management. Ultimately, of course, it is expected that the work will all be done by men trained both in hospital practice and in the science of management. At present no men with such combined training are available, and you must be satisfied to be taught the method of procedure by men trained primarily in the industries. This you will doubtless be willing to do as soon as you realize the likenesses in all fields of activity, or have actually observed the improvements that can be achieved.

The third concession to be made is the recognition of the value of the standard that has been derived by such methods as motion study. We can show you pictures which illustrate plainly the fact that standardization such as is used under scientific management is today practically unknown in many parts of hospital management, and especially in the operating room. You would see in these pictures not only that the "set up" for similar cases differs to a surprising degree, that the tools used, called "instruments" when used by a doctor, differ widely for operations, which, so far as is known at the time of "set up" (preparation), are identical, that the costumes vary, but that even nonessential details, which are in nowise governed by the desires of the operating surgeon, are arranged not only differently in different hospitals, but also by different members of the same hospital corps and by the same members at different times. It is, however, not necessary for us to show you such pictures, because you yourselves could, perhaps, supply more examples of this

lack of standardization than we could give you. In the hospital, as in all other centers of activity, there is some one best way for doing each thing that is done, but the complete best way is seldom in the consecutive acts of any one person. We must, therefore, attempt to find this best way, that large practice with comparatively few standards may be had; that the teaching, installing, and revising difficulties may be reduced to a minimum. Various articles in hospital literature and conversations with hospital authorities lead us to think that the "follow-up system" is believed to be scientific management. The "follow-up system" is but a very small portion of the problem. It bears about the same relation to scientific management as a "shingle does to a house." The "follow-up system" makes for better surgery and treatment. Scientific management's first aim is to install a self-perpetuating system for standardizing, and using the best of present knowledge and practice. Then, with such standards for a base line, inventing downward is discouraged and eliminated; the trend of progress is thus ever upward. At such a time the "follow-up system" will produce the greatest benefit.

The fourth concession to be made is that no one man is fitted to handle every kind of function of hospital management, and that the work will be better done if it is divided or "functionalized," and each division put in the hands of a man specially fitted and specially trained to do the work of his function. There has been a feeling prevalent that the surgeon is, because of his severe medical and surgical training, fitted to handle any and every part of hospital management. This feeling is gradually being broken down, as it is becoming more generally realized that the doctor's training, as such, in no way fits him for management or to manage, and that the management of the hospital should be handed over to a specialist, a trained manager, who can relieve the doctor of much work for which he is not fitted, and for which he has not been trained, and can thus allow him to devote his time entirely to such work as he can best perform, and get the best results and cause the greatest number of happiness minutes. While many of you today exemplify the new idea of hospital management in that you have received late special training to become the heads of institutions, yet many of you must acknowledge that the men working under you in the various departments are not specialists, in the general and not the medical sense of the term, and are not specially trained nor particularly fitted to do the work assigned them. When proper standards are determined, your work must be so divided and assigned that each man in the organization will do that work only which is the highest valued and most efficient work that he is able to do. This short outline will give you in a few words what is necessary to do at the outset in order to undertake to install the science of management in a hospital.

You will probably immediately ask, "What application, then, have functional foremanship, time study, motion study, standardization, theory of notification, and scientifically selected personnel, and method of pay to do with the hospital problem?" These are all methods or devices for measuring the units, making the standards, or insuring that the standards be maintained and continuously improved after they are once established. If you keep this idea clearly in mind, you may go through the existing literature and find that all the theory and the practice of installing the science has a direct application to your field, and that many things may be done by you immediately.1

A first step that we recommend is taking a survey of your present practice and of the members of your or-

^{1&}quot;Motion Study" and "Primer of Scientific Management," D. Van Nostrand, 25 Park Place, New York City.

ganization. In the industries we always state this first step as "reducing present practice to writing." You will be surprised what improvements will suggest themselves to you as a result of seeing in cold ink exactly what you are now doing in each department. While you cannot hope to reduce your management to a science without years of application to the problem, and without direction from a management specialist, you can at least make a beginning.

Begin, then, to reduce your present practice to writing without any idealization, and to determine in your own minds exactly what the work is that you are doing in your hospital, what lines of activity are included, and what kinds of work each member of the organization is doing. Then attempt to determine how many different kinds of methods you are at present employing for doing the same thing, and exactly which methods you consider best, and, therefore, worthy to be carefully measured and used as a starting point for a permanent standard. You will probably be surprised to find that you have not one place where you have a standard that you would care to have go before the world as the standard that you recommend. Begin, next, to observe these various kinds of work, to see the units by which each kind of work could be measured, the different methods that are being used in doing the work, and the different devices which are at hand or in use. We can tell you at the outset that you will be astounded to see how many methods you are using, and how many different kinds of devices are on hand for doing exactly the same kind of work. Remember always that the larger the number of different kinds of devices, the less practice and the less skill you will have with each. You will also be astounded to find on what principle your work is divided, or, in many cases, that your work is not divided according to any principle at all, but that miscellaneous duties are heaped on many members of the organization according to whether they have any more spare time. It is your task to decide which methods and which devices shall be first submitted to accurate measurement as possible starting points for the determination of the standards that will be at the same time the most potent object lessons as to what can be done under scientific management.

The second piece of work which you can do at the outset, and which may be done simultaneously with the first, is a study of the members of the present organization as related to one another in your organization chart, which is a graphic portrayal of what exists, to the end that you can visualize exactly what is the present state of the division of labor of your working force. At the head of this chart you will put your hospital superintendent, and under him you will put each member of the organization, connecting each individual with the others according as his duties relate him to them and the paths of authority. With data of your present practice and your organization chart, you will have your problem clearly before you. If you do not put a management expert in to make this survey, you will get the next best results by having each member of the organization, so far as he is willing to cooperate to this extent, write down his own practice of his duties, and, where this is not feasible, appointing some member of the organization, whom you know to be observant, to make a close study of the practice of the individual and to record it for him. In any case, it will be a valuable check to have the work even of those who are making records for themselves observed and described by an unprejudiced observer.

In selecting such methods and units as you desire to submit to accurate measurement, observe and compare the motions used in the various methods and the amount of fatigue caused. It may be of interest also to know the "over all" time, though this must in nowise be confused with "time study," and can only serve, in the final analysis, as a base line from which to start your learning curves and your progress. You might be interested to know that probably no present methods and even no present cycle of motions is the one that you will ultimately decide to use. The ultimate method will be a synthesis of the best elements of all methods submitted, but you will take most satisfaction out of this ultimate method when you can compare it with a carefully made record of the old method, and note the exact changes and improvements.

With regard to the ultimate organization charts, it is possible for us to give to you our functional chart, which illustrates the functions and paths of authority under scientific management, so that you may visualize for yourselves exactly what you are trying to do, and the sequence of steps in making the changes.1 The aim of this chart is to show not only how the work should be divided, but how the individuality of the workers should be conserved and utilized. There is probably no doubt in your mind as to the desirability of functionalizing the work, and determining not only the kind of work, but the pace at which work is to be done. Under present conditions in the hospital there is usually little or no data as to the pace or the fashion of work. The window washer usually takes on the fashion of work of the surgeon, and the laborer, who proceeds to get ready to undertake the beginning of his "operation" of sweeping a corridor, looks at the brooms and pail of sawdust with quite the same expression and mannerisms that the doctor uses when he looks on the etherized patient, and is apt to perform his work with the same disregard of methods of least waste as the surgeon may use in performing a critical operation. The point here is not that the surgeon should speed up his work. On the contrary, he should be so relieved of everything but his proper work that he may be able to slow down critical work to as great an extent as is desirable. The point is that a large amount of work done in the hospital is in no way a surgical or medical problem or of a critical nature, and there is no excuse for the prevalence of but one fashion of doing work for the whole establishment. Here is a typical example of where the methods, devices, standards, tasks, and methods of inspection already derived by motion study and time study in the industries can be taken over bodily.

Most workers in the hospital acquire, together with doctors and nurses, the feeling against specialization in the functions, and the belief that the giving up of general duties tends to impair permanent usefulness. They are apt to believe that those who are willing to do things entirely outside of their own special duties shall be recognized as having special merit only in their performance, while in reality the specialist in the function is the man of greatest usefulness and earning power today. Those who are doing their work with greatest efficiency for the organization as a whole can afford almost no time for work outside that specialty at which they are particularly efficient. This fact you must accept, and must recognize also the necessity for specializing such functions as inspection and discipline. We emphasize this particularly because in the hospitals these are the two fields in which specialization is most opposed. Without proper inspection no accurate records of performance can be obtained. Without specialized discipline no true cooperation can be obtained, and cooperation, after all, is the maintaining

^{1&}quot;Applied Science," Toronto University, March, 1912.

The following are the principles of functionalization to which you must ultimately conform:

1. The planning must be separated from the performing.

2. The superintendent must have such a training that he is capable of investigating conditions all through the hospital on the exception principle—that is to say, he must, when a case of peculiar success or failure is brought to him, be able to deduce the cause and to see that only desirable results are repeated.

3. The planning work must be divided into four parts, one of which shall include prescribing who shall do the work, where it shall be done, and when it shall be done; the second of which shall prescribe how it is done; the third of which shall keep account of how much time it took to do it, and how much it cost; and the fourth of which shall take care of the function of discipline and employment, and induce and maintain cooperation by ex-

plaining the "why."

4. The performing department must also be divided into four parts, the first and second of which shall consider different grades of teaching and the transference of skill and maintaining standard conditions; the third of which shall consist of preventing breakdowns and repairing; and the fourth of which shall consist of inspection.

5. A study of individuals to determine who had better work under each function, and to what extent, will do

much to hasten the speed of installation.

All of this work you can begin immediately. It would be futile at the present time to outline to you in detail the further progress of installing scientific management in hospital work, for several reasons. The first is that the progress, as so far outlined, is absolutely a preliminary to everything which follows. The second is that, until you have done some preliminary work, it will scarcely be possible for you to understand the details of the installation period.

It remains but for you to ask what will be the ultimate savings through the introduction of scientific management. They will be such savings as always result when for judgment, personal opinion, and guess work is substituted the use of accurate measurement. The doctor now uses such measuring devices as a watch, thermometer, etc., but there are many more measuring devices that are just as necessary for purposes of obtaining efficiency. Scientific management will cause elimination not only of waste of materials, but of waste of human effort, which is, in the final analysis, the most pitiful waste of all.

When your management becomes a science, there will result greater efficiency in you as individuals, and in the great work of the hospitals to which you all devote your

lives.

All great revolutions follow the same steps of progress—namely: (1) attention, (2) interest, (3) action.

We have been very fortunate in obtaining the attention and interest of such well-known leaders as your president, Dr. Howell, and some of the other leading surgeons of this and other countries; but we have not as yet been able to obtain any action to amount to anything, because of the fact that the entire structure on which hospital management is built is wrong. As the incentive, so will the result be, sooner or later. The incentive necessary to adopt the best from the industries does not exist at present.

Miss L. Stampher, matron at the Cottage Hospital, Hood River, Oregon, was visiting relatives in Austria when the war commenced, and owing to the difficulties of travel found it impossible to get out of the country.

MUNICIPAL HOSPITAL FOR PAY PATIENTS.

Mayor of Cincinnati Proposes Institution Where Doctors and Nurses Will Take Lower Fees—Editorial Comment by Medical Journal.

The Mayor of Cincinnati brings forward a new idea in suggesting the building of a municipal hospital for people of moderate means—that great middle class, by long odds the most enormous in the community, and yet, curiously enough, hitherto the most neglected, medically and surgically. Heretofore the only suggestion for the relief of these people has been that physicians and nurses reduce their fees for attendance on them. This the physicians have done for decades past, perhaps for centuries, but it is more difficult to settle this nursing question. This new profession seems loth to make concessions even to the class that most of its members spring from—and, to tell the truth, it seems difficult to explain why they should do so.

This arrangement would be but a distribution of charity-the money for the distribution being taken from the pockets of but two members of the community, the doctor and the nurse. The class that needs relief, however, is one of the most deserving in the body politic. It includes the vast mass of the working population and part of the professional classes. These people will not accept the outright charity of the free municipal hospital—their pride will not permit it. But they have not the wherewithal to employ both doctor and graduate nurse in their own homes, and cannot afford the charges of our present private hospitals plus their own physician's fees. These private hospitals all announce that they will take charity cases, or cases at such a reduced charge as to amount to the same thing, and, therefore, they have to make up what they lose on this class of cases by practically overcharging the private cases on full pay. If, therefore, we could have a private hospital that could furnish first-class shelter, food, and attendance at cost price, where the private physician could take his cases and have them under the care of graduate nurses from first-class training schools, a problem of the greatest importance would be solved, and solved to the satisfaction of the community, the nurses, and the physicians. And a cause of a vast deal of not unreasonable present discontent would be removed.

A municipality could perform no greater service for the community than this. Such a hospital, not ministering to charity cases, would have no staff—and there might be no particular reason why it should conduct a training school for nurses.—Lancet-Clinic, Cincinnati.

New Laboratory at New York Quarantine Station.

The new laboratory building of the New York Quarantine Station recently opened at Rosebank, S. I., is one of the finest of its kind in the world, both in construction and equipment. A concrete wall 6 feet wide at its base and 15 feet high extends 500 feet along the southern boundary of the quarantine reservation to protect the building. When completely installed, the cost of the laboratory, with surrounding improvements, will exceed \$90,000. Dr. Oscar Teague, formerly of Cornell, has been appointed chief of the laboratory staff.

Every nation is today rightly strengthening the protective efficiency of its quarantine department, and this splendid equipment in connection with the work of our greatest port not only fits us to meet inevitable consequences of the deplorable European war now raging, but affords splendid opportunity for research work.

the wounded.



Albert Allemann, M. D., Foreign Literature.

Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature.

Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Is Window Aeration Sufficient for the Renewal of the Air in Hospitals? (Gemügt zur Lufterneuerung von Krankenhäusern die Fensterlüftung). H. C. Nussbaum. Haustech. Rundschau, Berlin, 1914, No. 23.

The renewal of the air in sickrooms is a necessity. But ventilation through the open window is only possible in mild weather, as many patients are very sensitive to draft. As the renewal of the air in sickrooms is necessary day and night, even the smallest hospitals cannot do without some form of artificial ventilation. It is true, all ventilation systems have so far been very expensive, but the question of costs should here be disregarded. The creation of an efficient and practical system of ventilation is one of the most important technical questions in modern hospital construction.

A New Large Italian Hospital at Jerusalem (Un nuovo grande ospedale italiano a Gerusalemme). Rivista ospedaliera, Roma, 1914, V, No. 6.

This new hospital was founded by the Italian Missionary Aid Society, with the assistance of the Italian Government. The foundation was laid in 1911, but the construction was interrupted by the Turkish-Italian war. In the beginning of 1913 the work was again taken up. The building will soon be completed and will be opened in April, 1915. The hospital contains four stories, and has a frontal extension of 100 meters. It is built in the Siennese style of the thirteenth century, and is said to possess the finest building front in Jerusalem. The main front faces west. The central portion of the structure is occupied by a fine and large chapel. The wings are taken up by the various hospital divisions.

Psychoanalysis and Hospitals. L. E. Emerson. Psychoanalytic Rev., New York, 1914, No. 3.

The writer believes that psychoanalysis, primarily a method of therapy, has its own proper function to fulfill in hospitals; that, so far as the hospital itself is concerned, the adding of another department increases the burden to an organization already pledged to herculean labors. It is, however, of the greatest advantage to individual patients, and, relieved of medical responsibility, it becomes a greater opportunity to the psychologist. Perhaps the greatest value of psychoanalysis to the hospital lies in its opportunity to demonstrate the protean and deceptive forms of the symptoms of hysteria, simulating so successfully the symptoms of organic diseases that, unless one were consciously on the watch, he could be easily misled. Symptoms that have been treated medically and surgically, which later can be demonstrated to be hysteri-

cal, not vaguely, but with adequate cause, with theoretically valid etiology, are of the greatest use in future differential diagnoses.

Observations on the German Firing Line. An abstract

translation from letter of Prof. Paul Kraske, University of Freiberg. Lancet-Clinic, Cincinnati, October 3, 1914. If I review my experiences and observations since I first appeared on the scene of activity, I find that my expectations, which were not high in regard to the efficiency with which we were able to care for the wounded, have been markedly excelled. The conditions were favorable in that a large proportion of the injured could be cared for in a modern hospital under the direction of a skilled surgeon, who, with much energy and patience, conducted the many operations. Then, again, we found great difficulty in moving the wounded during the darkness of the night throughout which the battle continued. I am compelled to emphasize that our surgeons, assistants, nurses-and, in fact, the whole machine-withstood the first test in a brilliant manner. I could not make a single suggestion how this department could have been in the least improved. It

was a great pleasure for me to note with what calmness and deliberation the wounded were efficiently cared for.

There was an entire lack of hasty energy, which has so

often been noted in similar situations. The fundamental

principle of early occlusion of the wound has always been

intelligently carried out, with, of course, great benefit to

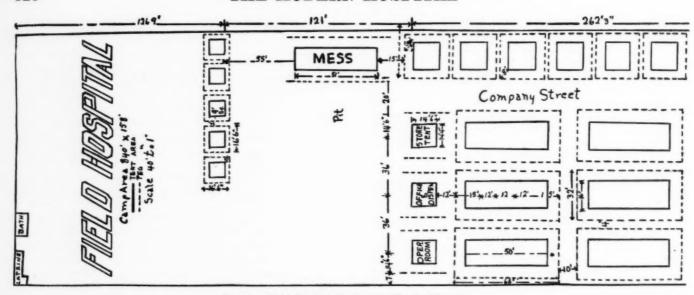
American Hospital at Neuilly. Abstract from London letter of H. M. Cohen. Lancet-Clinic, Cincinnati, October 3, 1914.

Not the least of the hospitals caring for the wounded is the American hospital at Neuilly. It is a magnificent example of what can be done in a few weeks by enthusiasm backed by ample funds. When war broke out, the American colony in Paris took over the Lycee Pasteur and set to work to transform a half-finished building-the school was not due to be ready for six months-into something resembling a modern hospital. They have succeeded admirably. Out of unfinished, rubble-choked rooms they have improvised clean, airy wards. They have an operation room fitted with all the new appliances, an x-ray room, a bandaging room, admirably equipped kitchens, and a devoted staff of nurses and orderlies. Men and women bearing, some of them, the most powerful names in our American plutocracy, are working there at the most menial tasks with admirable self-abnegation. It is the duty of an American multimillionaire to see to it that wounded Turcos, some of whom have been without a change of clothes for a fortnight, are thoroughly and conscientiously scrubbed. Dollar princesses are busy rolling bandages and preparing dressings. All Neuilly seems to be outside the iron railings, watching the comings and goings of the ambulance cars that roll up, and the citizens are loud in their praise of the care their compatriots are receiving at the hands of the brother republicans.

Handling Field Hospital Equipment. R. H. Goldthwaite, Captain Medical Corps, United States army. Mil. Surgeon, Chicago, 1914, XXXV, No. 4.

The author explains that methods for pitching the various elements of the field hospital are more or less an open question, and gives results of practical work with new material. It required two squads of four men each to pitch this tent. Ward tents with these new elements accommodate 36 patients.

The essential feature of these methods of accurate pitching is that the peg area, with its chief points so definitely marked by accurate measurements, leaves the tent



Handling Field Hospital Equipment-The field hospital.

area to take care of itself largely, for it must be obvious that, if the peg areas are exact and the guy pins accurately placed, the tent must of necessity be exactly placed and the alignment correct. In working from a greater area to a smaller one, mistakes are minimized and largely eliminated, whereas in working from a small area to a larger one there are largely increased chances of placing pegs incorrectly and errors in measuring the smaller area will be magnified.

The appended diagram gives all the data necessary for accurate pitching of a field hospital, including every essential measurement. It is adapted and amplified from the diagram in the field service regulations for 1914.

On account of the numerous changes in property equipment of field hospitals, and the increase in personnel, the loading scheme for a field hospital as given in the manual for the medical department is no longer applicable.

The following loading scheme, based on the new equipment, has been tried out on wagons as far as possible and found satisfactory. Of the eight wagons required, the loading was as follows: No. 1, kitchen supplies; No. 2, dispensary and operating tent equipment and supplies; No. 3, tentage for hospital wards; No. 4, equipment for hospital wards; No. 5, forage, officers' baggage and tentage; Nos. 6, 7, and 8, supplies.

The Sanitary Aid in Foundling Hospitals (L'assistenza sanitaria nei brefotrofi). M. Reano. Rivista di igiene e di san. pubblica, Parma, 1914, XXV, No. 9.

Infantile mortality in Italy is still very high. mortality of illegitimate children is, for many reasons, greater than that of children born in wedlock. The protection and care of children, be they legitimate or illegitimate, is a sacred duty and a patriotic, social, and humanitarian work. There are two systems of care for illegitimate children. The Anglo-Saxon, in force in England, Germany, Austria, Switzerland, Denmark, Sweden, and Norway, is founded on the principle that the maintenance of legitimate and illegitimate children is the duty of those who have brought them into life. The other, or Latin system, is in force in Italy, France, Hungary, Spain, Portugal, and Russia, and is based on the collectivist principle. Foundlings and illegitimate children are cared for at public expense, and it is not permitted to search for the father. In Italy the burden of caring for illegitimate children rests on each province, which maintains a foundling hospital. The mortality in these foundling houses has always been

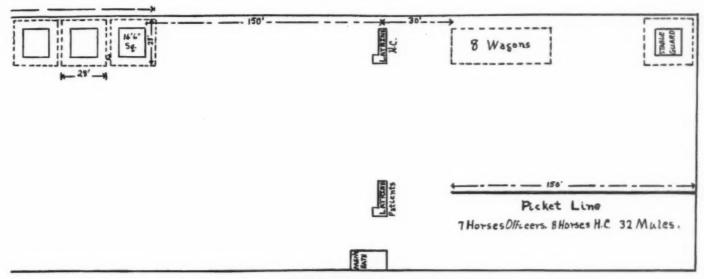
very high, but of late years it has gradually been decreasing. From 1900 to 1910 the mortality of infants under one year in the foundling hospital at Milan has been reduced from 45.6 percent to 30.3 percent. In Turin it has decreased during the same space of time from 50.8 to 32 percent. The foundling hospital of Turin does not only take care of foundlings and illegitimate children, but gives also assistance to poor married mothers who are not able to bestow proper care on their children.

Antityphoid Vaccination of the Personnel in the Paris Hospitals (Vaccination antityphique du personnel des hopitaux de Paris). Mesureur. Gazette Méd. de Paris, 1914, LXXXV, No. 252.

Antityphoid vaccination has been practiced for several years with great success among the French troops in Africa. By a law of March 28, 1914, it has been rendered obligatory in the whole French army. In a number of Paris hospitals, notably at Val-de-Grace, preventive inoculation against typhoid fever was introduced several years ago, but it was not compulsory. Through the initiative of the author, who is director general of the public institutions of Paris, antityphoid vaccination has now been made obligatory for all persons who are employed in the hospitals of Paris. The measure was not carried through without great opposition from various sides. It was said that this vaccination was useless, that it was dangerous, and that several persons had died from infection as a result of this vaccination. The author combats these adversaries, and shows that the few deaths reported must be attributed to other causes and not to the antityphoid vaccination.

Insane Asylum or Hospital? (Irrenanstalt oder Heilanstalt?). Ztschr. f. Krankenanstalten, Leipzig, 1914, X, No. 25.

The modern institutions for the insane have little in common with the prisonlike establishments of earlier times. They are situated in beautiful localities, the buildings are clean, neat, and attractive, and surrounded by pleasant parks and gardens. All these changes are due to the great progress of medical science and of modern architecture, and to the modern spirit of humanity, which tries to remove all those influences which have an unfavorable effect on the patient and to make his surroundings as pleasant and attractive as possible. The treatment of the patients, too, has greatly changed. The old compulsory procedures have given way to kindness and rational thera-



Handling Field Hospital Equipment-The field hospital.

peutic methods. All the means of science and experience are called on to promote the curative process of curable patients, and to render the condition of incurable patients more pleasant and bearable. Only in one point we frequently hurt the feelings of the patients—in the name we give these institutions. The name "insane asylum" (Irrenanstalt) has fortunately been discarded by most institutions, especially in middle and southern Germany, and the name "hospital" (Heilanstalt) is generally used. The nurses and all employees of the hospital should be strictly enjoined not to use names and expressions which might remind the patients of the place at which they are. As it is the mind of the patient that is affected, it is of highest importance that everything should be avoided that might have an unfavorable influence on the cure.

Modern Ventilation Arrangements in Hospitals and Charitable Institutions (Moderne Lüftungseinrichtungen in Kranken- und Humanitätsanstalten). M. Setz. Wiener klin. Wchnschr., 1914, XXVII, No. 24.

The simplest method of ventilation consists in opening windows and doors, but in winter too much heat escapes uselessly, and many patients cannot bear the draft caused by such a ventilation. Engineers have tried in various ways to make use of the difference of heat-i. e., of the density between the inside and outside air as a moving principle for a natural ventilation. The well-known fact that the air, like all gas mixtures, lies in horizontal layers, whose density decreases from the floor upward, was the basic idea to accomplish aeration of a space in a vertical sense by a disturbance of the equilibrium between the various layers. But none of the various systems proved to be practical, as it was impossible to avoid the disagreeable effects of drafts. Lately the Belgian engineer, Prof. A. Knapen, invented a system of ventilation in a horizontal sense. In his natural system of ventilation, which he calls "aération différentielle," and which was patented in all countries, he proceeds from the fact that between two opposite sides of a building there exists, on account of the effects of sunlight, a difference of heat 1/2 °-1° C., and therefore also a corresponding difference of density in the outside air, so that in fact a horizontal aeration from the cooler to the warmer side is made possible. Three tiers of openings are made in the walls, which slant outward and downward, and are connected by openings among themselves. To prevent drafts, the sizes of these openings must stand in a definite relation to each

other, and no two openings of the same size must be opposite each other. On the outside these openings are covered by wire netting and on the inside they are provided with stopping slides. In the partition walls there are horizontal openings, and the doors, above and below, are provided with openings, so-called "glissières," which can be closed by metal slides. The slanting openings near the ceiling are, of course, the largest, and serve especially for the admission of fresh air, which in its downward course is gradually consumed and heated. The consumed air, heavy gases, carbon dioxid, etc., escape through the lower openings, while the openings in the middle serve as regulators. The greater pressure on the openings of the colder side, and not the difference of temperature between the inside and outside air, is the moving principle to produce complete aeration. The slightest increase of pressure on one side of the building sets at once the whole system in motion, and, as there is always a difference of pressure, this system operates both day and night. The article is accompanied by several diagrams.

The New Operation Building of the Eppendorf Hospital (Das neugestaltete Operationsgebäude des Eppendorfer Krankenhauses). H. Kümmell. Beiträge z. klin. Chirurgie, Tübingen, 1914, XCII, No. 1.

The Eppendorf Hospital near Hamburg is by far the largest institution of its kind in Germany. The surgical building occupies a central position in this great hospital city. It contains four operation rooms, and the largest of these is located at one end of the building, facing the central corridor. It has a large amphitheater, with stone seats and room for 100 persons. The amphitheater has its own entrance from outside, and is connected with a room where the students are required to put on a long white gown, which is washed every day. This operation room gets its light from the entire north side and from above. At night artificial light is furnished by six powerful incandescent lamps of 1,000 to 3,000-candle power each. Sidentopf's mirror illumination is another efficient source of light. An epidiascope of latest construction is used to project images of interesting subjects on the wall opposite the spectators while the room is darkened. A daylight projection apparatus is also available, which produces clear and distinct images without requiring a dark room. The other operation rooms are located along the central corridor, and are of somewhat smaller dimensions. In the same building is also a well-equipped roentgen institute exclusively for the use of the surgical division. Over 5,000 roentgen pictures are here taken annually. The building contains also laboratories for scientific photography, chemical researches, and bacteriological studies. A large room is provided for experimental surgery, where animal experiments are carried out on an extensive scale.

Private Duty Nursing. Jeannette McClellan, R. N., American Journal of Nursing, September, 1914.

The author read her paper to the senior class of pupil nurses at the Methodist Episcopal Hospital, Brooklyn. She took her hearers into the private homes in which she had served, telling them many anecdotes of happenings there-of the difficulties of nursing in some homes and the pleasures in others. A saving grace of humor must have been vouchsafed to Miss McClellan, because, as she told some of her experiences, there was always a funny side to even the most calamitous incidents. The value of the author's paper lay in her insistence that a nurse on private duty must accommodate herself to conditions as she finds them; that she must always accept the inevitable and make the best of it; that she must always be a help and never a hindrance to a stricken family; that she must sometimes do things wholly foreign to a nurse's normal duties, in order to get the best for her patient; make friends in the family, including the servants, and that sometimes she must exert her greatest ingenuity-to even make the limited laundry hold out. Nurses should read Miss McClellan's paper; it will give them a fine picture of what they are going into, and remembrance of her admonitions will often save them from embarrassment and mistakes

Does Ice Convey Infectious Diseases? Hugh S. Cumming, of the United States Public Health Service.

Very soon after the discovery of the cholera vibrio by Koch and the typhoid bacillus by Eberth it was learned that these diseases were spread largely by water infected by the causative organism, and scientists studied the viability of the organism under varying conditions and environments. It was promptly shown that, while moderate heat for a few minutes (60° C. for twenty minutes) would kill all such germs, some will resist cold for a long time.

1. Clear ice is, of itself, as free from the danger of conveying infectious disease as we need wish.

2. Dirty or cloudy ice may be dangerous. It should not be placed in water nor on food which is to be eaten uncooked.

3. There may be danger in eating iced foods or using iced drinks if the ice is improperly handled when placed in contact with the drink or food.

4. We may eliminate all danger by avoiding the handling of ice with dirty hands, by washing the ice with pure water, and by using only clear ice.

5. The average laboring person does not always have the opportunity, even if he have the inclination, to cleanse his hands after attending to those necessities of nature which require their use for purposes which almost inevitably result in their contact with excreta, which may contain the organisms of disease, even in apparently healthy people. It is therefore impossible to overestimate the danger resulting from the handling of ice by unknown persons if the ice is placed in direct contact with drinking water. Consequently, where intelligent personal supervision is impracticable, those furnishing the water should be instructed to adopt such means of cooling water as do not require direct contact of ice and water.

Uniform for Nurse Corps.

By order of the secretary of war the uniform of the Nurse Corps, United States army, for service at army posts and general hospitals will consist of a waist, a belt, and skirt of suitable white material, a bishop collar, and white cap. The uniform for field service is to consist of a one-piece dress made of blue-gray cotton crepe, a plain white apron, a turnover collar, and a white cap.

British Red Cross.

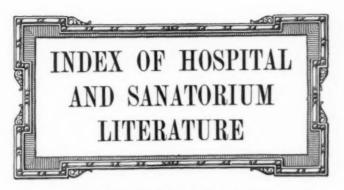
The London correspondent of the Philadelphia Press claims the British Red Cross Society can call on 60,000 persons, many of them highly trained, to undertake field ambulance and hospital work. If there is a serious demand for their services, it is estimated that at least 95 percent of this number will obey the call. The society is the body officially recognized by the War Department, and acts under the direction of the admiralty and war office, in conjunction with the hospital staff. Its present organization and status are due to the lessons of the South African War, when various independent nursing societies, some of them poorly managed and all interfering with each other's movements, caused the authorities no end of trouble. The result was that all societies were amalgamated and put under one head. The forms of aid of the society include the provision and equipment of hospital ships and trains, hospitals and convalescent homes, clothing, medical supplies, food, and comforts for the soldier, such as pipes, tobacco, chocolate, playing cards, and stationery.

Isolation Hospitals.

The Cambridge University Press proposes to publish a series of manuals of public health. One of the volumes of much interest is by Franklin Parsons on isolation hospitals. With the advance of a sanitary conscience among a people, such hospitals must become more and more necessary, and of greater use. In earlier days and among backward and primitive peoples much opposition is felt, and many of us remember the plague riots and the burning of plague camps and hospitals by the very people for whose good they were intended. The first isolation hospitals were the lazar houses for the isolation, or rather segregation, of lepers. In the thirteenth century, it is said, almost every town in France had its "lazar house;" the plague led to "pest houses," and at Sevenoaks an old house with this name existed down till 1902. "Fever hospitals," according to Dr. Murchison (who became a fever expert after his retirement from the Indian service), were established as a result of the great typhus epidemic of the eighteenth century. The London fever hospital was opened in 1802, and a previous smallpox hospital in 1745.

The Public Health Act of 1848 had no clause authorizing the establishment of isolation hospitals. The Metropolitan Poor Law Act of 1867 led to the establishment of what is still quaintly called the Metropolitan Asylums Board, which is now the ultimate public health authority of London. Other important acts were the Diseases Prevention Act of 1855, and the Sanitary Act of 1866 due to the cholera outbreak of 1866.

The uses of an isolation hospital are threefold—(1) to cure or relieve the sufferer, (2) separate their infectious sick from the rest of the community to prevent the spread of the disease, (3) and to obviate the difficulties, inconveniences, and pecuniary losses which the presence of infectious disease might entail.



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Hospital Furniture in Use at the Massachusetts General Hospital.

BY FREDERIC A. WASHBURN, ADMINISTRATOR.

Since publishing the pamphlet entitled, "Home-Made Hospital Furniture," by Dr. Herbert B. Howard, then administrator of the Massachusetts General Hospital, and by the present writer, certain other apparatus and devices have been introduced. Some of these originated at this hospital and others are frankly copied. Such of these pieces of apparatus as are made of copper were constructed outside under our direction; the others, made of iron or wood, were all built by our own mechanics.

STERILIZING HOPPER.

In constructing the sterilizing hopper, it is important that the double jacket should be carried down to the valve seat in order that the column of water may boil throughout its depth. This hospital has used this sterilizing hopper for a number of years successfully and with no complaint. At other places where they have been installed, objection has been made to odor and noise and to the boiling over of the contents. These faults are due to improper installation and use. The vapor vent pipe

should be large and straight. It is possible to introduce into this vent pipe a small jet of live steam to add to the suction when necessary. This will effectually carry off all vapor, so that there will be no odor in the room. To prevent boiling over, it is necessary to have a line on the outside of the hopper, above which level it should never be filled. There will be no noise if the steam is introduced gradually to the double-jacketed part of the hopper.

BED-PAN STERILIZER.

The bed-pan and urinal sterilizer is a simple affair, consisting of a copper receptacle with a steam coil in the bottom. Into this water is introduced. The bed pans or urinals are placed in the wire basket suspended in the boiling water.

STEAM TABLE.

The steam table for the diet kitchen has a copper top, in which are holes of various sizes to hold earthenware receptacles for the food. These set in water which boils by means of a steam coil. Beneath is a hot oven heated by steam coil for dishes. This is a common contrivance, used in many places, and scarcely needs to be mentioned.

DISH STERILIZER.

The utensil sterilizer and the dish sterilizer are built on the same plan as the bed-pan sterilizer. In the utensil sterilizer are boiled the enamel bowls, basins, and other such utensils used in the ward. The dish sterilizer is used in the ward kitchen for boiling dishes after they have been washed. In some instances today we are installing dishwashing machines in the ward kitchens. This cannot always be done because of the noise and steam arising from them.

OPERATING INCLOSURE.

The operating table inclosure is a useful device for

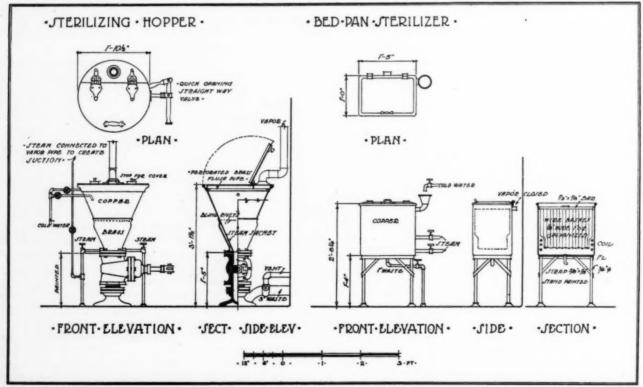


Fig. 1. Hospital furniture in use at the Massachusetts General Hospital.

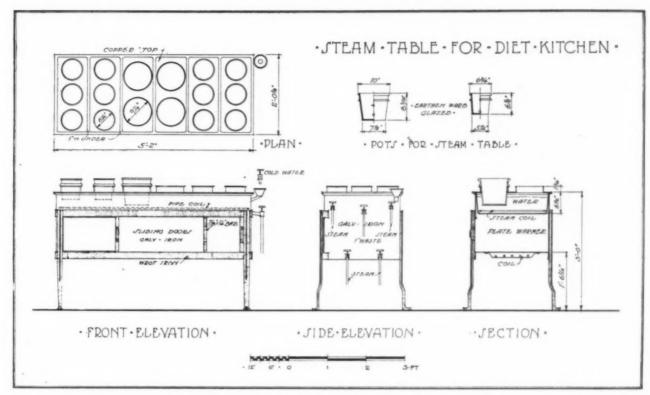


Fig. 2. Hospital furniture in use at the Massachusetts General Hospital.

encircling the field of operation to keep back those who do not properly belong to the operating force. This may be moved at will and placed in any part of the operating room. It is made from %-inch iron pipe and railing fittings. The feet are flanges, to which are bolted with countersunk bolts round wooden disks.

BED SCREEN.

The bed screen frame is made of %-inch iron pipe, with railing fittings. The arms of the screen are made of %-inch iron pipe. Leather casters are used to lessen the noise in wheeling the screen about the ward. The basin stand and the tray stand are ordinary articles of hospital

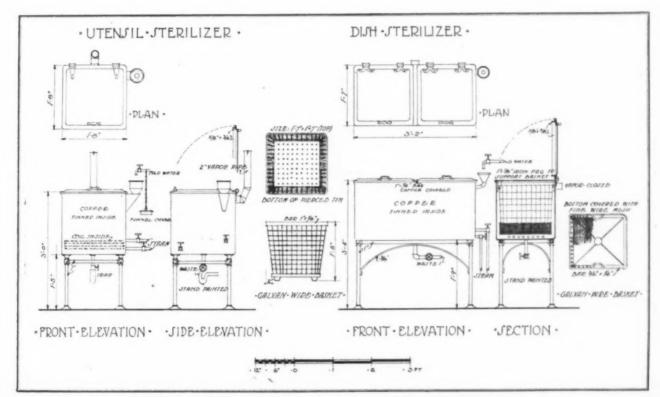


Fig. 3. Hospital furniture in use at the Massachusetts General Hospital.

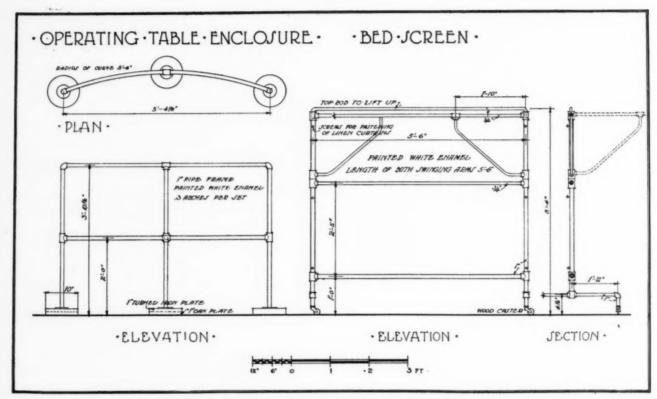


Fig. 4. Hospital furniture in use at the Massachusetts General Hospital.

attention to them simply because they are made by our own mechanics.

DRESSING CAR.

The dressing car is a useful piece of ward furniture,

furniture. They are made of %-inch iron pipe. We call which may be wheeled from bed to bed and saves many steps. It is made of %-inch iron pipe. The bed-pan rack may be made with or without a steam coil beneath it. The steam coil is a simple device for keeping the bed-pan warm. It is not essential, as the bed-pan may be readily warmed by dipping it in warm water.

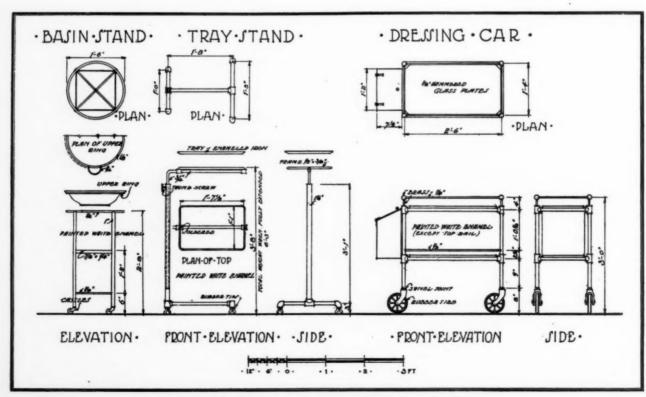


Fig. 5. Hospital furniture in use at the Massachusetts General Hospital.

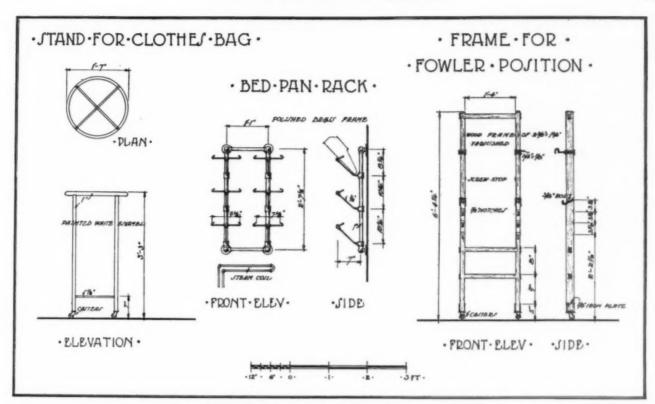


Fig. 6. Hospital furniture in use at the Massachusetts General Hospital.

WHEEL BED.

The wheel bed herein described is very satisfactory. The writer believes it was first devised by Dr. Donald J. Mackintosh, of the Western Infirmary, Glasgow. We have recently made over a number of our blacksmith beds to this type. It will be noted that the wheels at the head of the bed are not on swivels, and that when the bed is

in place in the ward it remains there by coming down upon the bed posts at the foot. This permits a more orderly appearance to the ward than is possible by other forms of wheel beds.

PARCEL TRUCK.

The parcel truck is used for the distribution of parcels

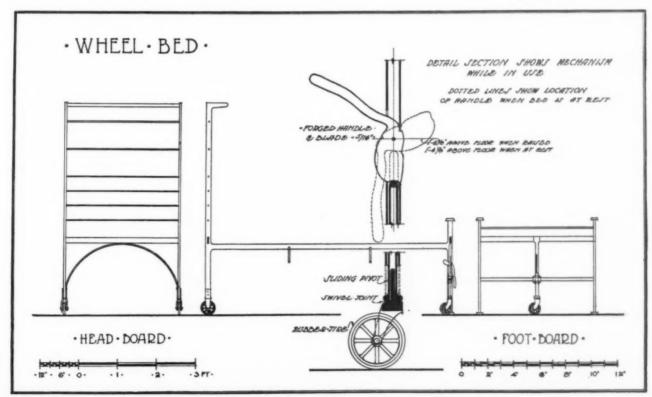


Fig. 7. Hospital furniture in use at the Massachusetts General Hospital.

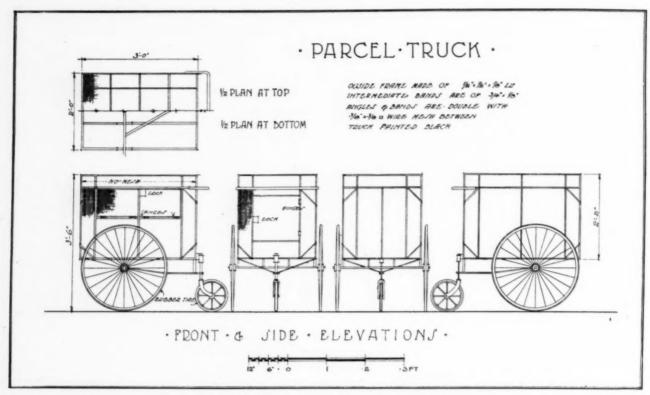


Fig. 8. Hospital furniture in use at the Massachusetts General Hospital.

received at the office. It is provided with a lock and key, so that there can be no excuse for lost packages in transit.

BLANKET WARMER.

The blanket warmer is a useful accessory of the operating room. The one which is made at this hospital is simple and effective.

WALL CABINET.

The wall cabinet is shown here for the purpose of illustrating the length to which we go in setting our furniture out from the wall. Practically no closed joints are allowed in new construction or repairs involving ward fixtures. The illustration also shows the sloping top,

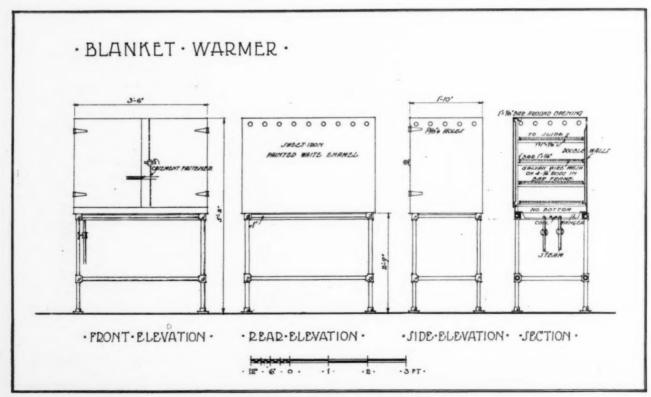


Fig. 9. Hospital furniture in use at the Massachusetts General Hospital.

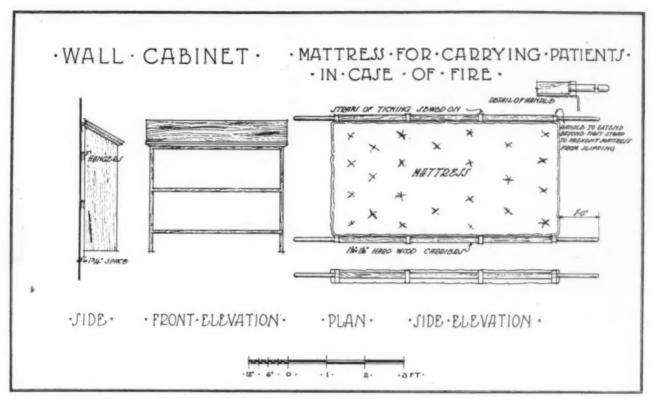


Fig. 10. Hospital furniture in use at the Massachusetts General Hospital.

which makes any accumulation of dust visible to the it gives the patient an opportunity to look over a number inspector.

FIRE MATTRESS AND POLES.

The upper mattresses on the hospital beds have loops sewed at the side, and poles painted red are stacked outside the wards. Note the extra long handles, and the fact that the end loop comes beneath the shoulder of the handle in order to prevent the slipping of the mattress when coming down stairs.

LIBRARY TRUCK.

The library delivery truck is used by the keeper of the patients' library in distributing books through the wards; of books and make his own selection.

Napkin Ring Holder and Ward Trays.

BY MISS JESSIE F. MAC KENZIE, SUPERINTENDENT PROVINCIAL ROYAL JUBILEE HOSPITAL, VICTORIA, B. C.

It has been my intention for some time to send to the department of "Home-made Hospital Appliances" in The MODERN HOSPITAL a few items of interest, but matters pertaining to the European war have kept all of us very busy. Five of our graduate nurses have been called 'to Sal Cartier, and are now on their way across the ocean.

I send the photograph of a sideboard which I designed

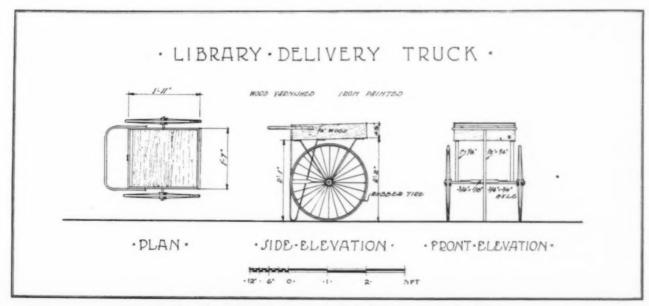


Fig. 11. Hospital furniture in use at the Massachusetts General Hospital.



Fig. 1. Sideboard, with cabinets for nurses' napkin rings.

for the nurses' dining room. Each nurse has a number, and her napkin ring bears a corresponding number, as does also the round pigeon-hole in the upper portion of the sideboard. When a nurse enters the dining room she takes her napkin out of its pigeon-hole, and replaces it on returning from that room. The back of the napkin container is removable, which permits the round holes to be thoroughly cleaned.

I send also the photographs of an emergency tray and a dressing tray, with lists of articles these trays contain. An emergency tray is placed at the bedside of the patient who has just returned from the operating room. The dressing trays are always kept in readiness, so that, if a doctor has occasion to do a dressing, he is not kept waiting.



Fig. 2. Emergency tray.

EMERGENCY TRAY.

Sponge forceps (2).
Bullet forcep.
Mouth gag.
Tongue depressor.
Spoon.
Alcohol lamp.
Matches.
Cotton.
Sponges.

Thumb forceps (2).
Hemostat.
Scissors.
Kocher probe.
Tap sheet, small.
Cotton.
Sponges.
Towels, sterile (4).
Bandages.
Nitrate of silver stick.
Collodion.
Adhesive, sterile.

Stethoscope.
Alcohol.
Whisky.
Camphorated oil.
Ether.
Distilled water.
Camphorated oil syringe.
Hypodermic syringe.

DRESSING TRAY.

Adhesive, unsterile.
Gloves.
Aristol powder.
Talcum powder.
Iodoform powder in blower.
Benzine.
Alcohol.
Peroxid.
Iodin.
Paper bag.
Kidney basin.



Fig. 3. Dressing tray.

In addition to the two trays of which I send photographs, we have the following trays containing the articles named:

LUMBAR PUNCTURE TRAY.

Sterile gloves. Iodin.
Sterile test tubes. Collodion.
Sterile towels. Ethyl chlorid.
Sterile sponges. Sterile needles.
Sterile cotton. Z. O. adhesive plaster.
Alcohol. Scissors.

EYE COMPRESS TRAY.

Alcohol lamp.

White enamel basins (2).

Pus basin.

Tin vaseline.
Anatomical forceps (2).

Scissors.

Bath towel.
Surgical towels (3).

Anatomical forceps (2).

Scissors.

Experiment to the path of the path of

HYPODERMOCYLSIS TRAY.

Glass percolator, 1,500 cc.
Glass graduate, 500 cc.
Pitcher, 2,500 cc.
Pitcher, 2,500 cc.
Florence flasks, 1,000 cc. (2).
Kidney basin.
Hypodermocylsis needles, sterile
(2).

Z. O. adhesive plaster.
Scissors.
Hemostats (2).
Ethyl chlorid.
Sterile cotton.
Sterile sponges.

NEUROLOGIC TRAY.

Essence of peppermint.
Tincture of asafetida.
Ammonia.
Sugar.
Pepper.
Salt.
Pins.
Cotton sponges.
Basin.
Electric battery.
Cold water in test tubes.
Cold water in test tubes.

PREPARATION TRAY.

Small round basins (3). Ether.
Kidney basin. Razor.
Toilet paper.
Alcohol. Towels (2).

STOMACH TRAY.

Stomach tube, with bulb.
Stomach tube, without bulb.
Funnel.
Round basin, sterile.
Round basin, unsterile.
Kidney basins (2).

Pitcher, 2,500 cc.
Glass graduate, 500 cc.
Rubber sheet.
Glass of water and small tray.
White enamel pail.

MEDICAL TRAY.

Gloves.
Percussion hammer.
Metal tape, metric.
Vaseline.
Blue pencil.
Tongue depressor.

K. T. lubricant.
Towels.
Ophthalmoscope.
Electric light.
Pins.
Toothpicks.

CATHETER TRAY.

Catheter pot. Small basin.
Glass catheters (2). Sterile towels.
Glass graduate. Sterile sponges.
Kidney basin.

SMEAR TRAY.

Alcohol lamp.

Matches.
Alcohol.
Cotton.

Slides, glass.
Copper wire loop, with solid glass rod.

Another Can Masher.

Some months ago Mr. Bacon, of the Presbyterian Hospital, Chicago, showed in this column a device for flattening out empty tin cans. Mr. P. W. Behrens, superintendent of service at Lake Forest University, sends in the accompanying illustration of another device for this same purpose. The mechanism is obvious. One or more cans



Behren's can masher.

are set under the plate and the powerful lever is brought down upon them. The work is done very quickly, and the cans are mashed very flat.

Infant Bath Table.

DESIGNED BY DR. ANNE H. M. SHARPE, SUPERINTENDENT NORTH CHICAGO HOSPITAL.

The table is not expensive, yet it seems to meet the requirements of a limited nursery service. It is light, portable, easily kept clean, strong, and durable. The design is



Infant bath table.

obvious, and the table can be folded. The basin is removable, and the soap dishes are merely nests stamped in the table top. The size is 44 by 22 inches, 36 inches high, and the total weight is 35 pounds.

A free dispensary and hospital, which it is proposed to conduct along the lines of the Mt. Sinai Hospital in New York, was opened in Springfield, Mass., in October. The establishment of the institution was made possible through a gift from a man whose name has not been made public of \$1,000, with which to begin the work. The same man has given assurance of further support in the event that other persons of means show an inclination to cooperate. Dr. M. L. Slutskin is in charge of the dispensary, with Dr. Nathan Fialke, of Holyoke, and a nurse as his assistants. Patients will be charged 25 cents for registration and 25 cents for the necessary drugs and medicine. Cases of childbirth will be handled for something less than \$5. All other treatment will be free.

HINTS FOR HOSPITAL SUPERINTENDENTS.

Every once in a while somebody connected with the hospital proposes to knock out a partition here or build one in there. Better think about it before you go ahead. Never a hospital was built that exactly fits every purpose for which it was intended, and, even if it was precisely in accordance with the necessities at the time it was planned, conditions change; the proportion of certain classes of patients changes, or it becomes necessary to do things differently from the old way to meet new requirements of the doctors. Sometimes the knocking out of a wall and the putting in of a door or archway will do wonders in the way of economical administration.

A good many superintendents have an idea that there is something very mysterious and almost unattainable in what we understand by the term "good technic" in the medical care of hospital patients. That isn't true; elaborate equipment is unnecessary, especially in a small hospital, and the simpler the technic, the better. There must be a laboratory as an aid to diagnosis; it need not cost more than \$500, even if everything has to be bought at once, and there must be at least one ward set consisting of a blood counter, a blood pressure apparatus, and a hemoglobinometer. There is scarcely a town of 5,000 population in the country that does not number among its medical profession someone who has had laboratory training sufficient to do decent laboratory work and use the apparatus. The rest of the scientific work depends on organization and the institution of proper methods. Lean on your medical staff for guidance, and, if they fail you, call in some young medical man who is not on the staff, and who has served an internship in a good hospital. Play your medical men against each other, and see how quickly they will wake up.

The hospital milk situation is not in good condition. Only recently a hospital was found which was engaged in the very serious and to them important work of pasteurizing their milk after it came to the institution-milk that had already been pasteurized by a commercial distributing concern. What arrant nonsense this is, and how it goes to show what creatures of routine and habit we are! If milk is not good when received, it had better be pasteurized, but a double pasteurization is nonsense, and clean, fresh milk ought not to be pasteurized at all, unless it is formula milk for sick children. It is not a difficult matter for the pathologist to find harmful microorganisms in milk by plating out cultures and using his microscope. If there are no, or very few, colon bacilli in milk, and no tubercle bacilli and no streptococcus-showing inflammatory conditions or abscesses in the cow's udder-a moderately high bacterial count is not very harmful, because the bacteria are of the lactic acid variety and are physiologic rather than pathologic. Sour milk is not necessarily a dangerous milk, although the bacterial count is away up. There are two harmful forms of milk-one in which there are numbers of pathogenic microorganisms, and the other is milk that has been allowed to stand until the bacterial toxins of these immense numbers of bacteria, which are not destroyed by pasteurization, are sufficient to do great harm to sick people, and especially to sick children. This milk is highly dangerous because the absence of bacteria gives an unwarranted security.

Four cottage ward buildings and a separate kitchen have lately been completed for the Northern Hospital for the Insane at Sedro Wolley, Wash. All of the buildings are connected by underground passageways.



A New Bandage Fastener.

A little device for fastening bandages securely and neatly has recently been introduced, and is offered by the supply houses under the name of the Swope bandage fas-



Fig. 1. Swope bandage fastener.

tener. After the bandage is applied to the injured member, the loose ends are folded under for about one inch. The bandage fastener (Fig. 1) is introduced into the



Fig. 2. Bandage fastener applied to finger and wrist bandage.

folded end, with the ring parts (Fig. 1) pointing upward, leaving the ring hooks pointing downward. By slightly pulling the bandage down, the lower hooks are



Fig. 3. Bandage fastener applied to arm bandage.

pushed into the bandage and held securely. The hooks are turned in and well rounded, thus preventing injury from the sharp points. Fig. 1 shows the actual size of the fastener, and Fig. 2 illustrates the application of the device to bandages on finger and wrist.

Universal Extension Apparatus.

DESIGNED BY DR. CARL J. SWENSON, CHICAGO.

There are a number of devices on the market for the purpose of securing proper extension in cases of fracture of the extremities, but none of them seem to be so universally adjustable and so easily applied as the apparatus which is illustrated here. It consists of an adjustable clamp (Fig. 1), which has a bayonet-shaped rod, with a grooved safety pulley at the top and a rod for holding the weights. Adhesive plaster strips 1 inch wide and 12 inches long are applied to the leg, and similar strips are passed through the opening in the foot plate and doubled back on themselves. These loops are then fastened with safety pins to the leg strips above the ankle. The clamp



Fig. 1. Swenson's universal extension apparatus.



Fig. 2. Swenson's extension apparatus applied.

is then applied to the rail of the bed (Fig. 2), and the necessary number of weights (each weight 1 pound) are placed upon the rod provided for this purpose. The whole procedure can be accomplished in a few minutes.

Apparatus for Duodenal Feeding.

BY DR. MAX EINHORN, NEW YORK.

The difficulty of proper nutrition of patients suffering from ulceration of the duodenum of the stomach, dilation of the stomach, nervous vomiting, certain diseases of the liver, etc., have led Dr. Einhorn to devise what he claims to be a safe and efficient method of feeding such patients, while at the same time putting their stomachs at rest, and for this purpose the doctor has designed the apparatus illustrated (Fig. 1). The apparatus consists of a glass syringe, the plunger of which is wound with a sterilizable mineral packing, tube with stopcock leading to duodenal tube (B), three-way stopcock (C), tube D leading to fluid F, container G, and table support T. When the lever C is turned parallel with A, fluid can be aspirated from the

glass container into the syringe; and when lever C is turned parallel with B, the fluid from the syringe can be introduced into the duodenum.

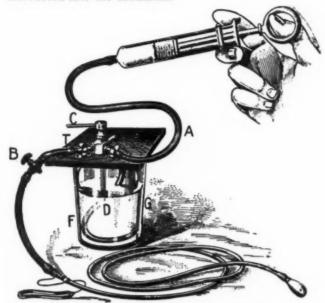


Fig. 1. Einhorn's duodenal feeding apparatus.

Dr. Einhorn states that in normal cases it will usually take from two to three hours for the tube to pass into the duodenum, but in cases where one may have to deal with pyloric spasms, it will take much longer, and there are cases on record where it took twenty-four and in one case even thirty-six hours. The food is usually given every two hours, eight feedings a day. The standard food



Fig. 2. Patient being fed through duodenal tube.

is milk, 7 to 8 ounces, or 1 egg. When patients cannot take milk, water with barley or pea flour is substituted.

Fig. 2 shows a patient being fed through duodenal tube, but it is stated that the patient very soon learns to administer the food himself. The term of treatment as given is from ten to fifteen days, and the tube stays in the duodenum during this entire period.

A Device for Supporting the Arm. BY DR. A. B. EUSTACE, CHICAGO.

The splint illustrated here (Fig. 1) is a modification of an axillary splint devised some years ago by Dr. A. Radcliff, of Waukeegan, Ill., and recently improved by Dr. Eustace, so that it is now a perfect support for the arm in all conditions where edema and inflammation are in evidence. The wearing of such a splint following an operation of carcinoma of the breast, especially when a radical operation has been performed with axillary dis-

section, is of great benefit. Other surgical operations where the splint may be adapted are fracture of the bones of the forearm, dislocation of the wrist and the elbow joint, following application of skin graft to the arm or



Fig. 1. Eustace arm supporting splint.

the axilla, etc.—in fact, in all cases where the arm should be put at rest for some time after surgical interference as the splint will form a firm support to the arm, hold the extremity in a fixed position, and relieve all tension upon sutures.



Fig. 2. Eustace arm supporting splint applied.

The device consists of four parts—a belt with strap and buckle, three forks, a wire frame, and suspenders. The belt is made of a steel band three-quarters of an inch in width, which is padded and covered with leather, and a strap with buckle attached. The steel rod passes down from the base of the fork proper, the lower end of which is threaded and fits into a cylinder (E), which is likewise threaded, thus allowing one to regulate with ease the height of the forks as well as to adjust them perfectly

to the arm. At the lower end of the cylinder a smaller fork (F) fits on to the belt and is fastened to it with a screw.

The device is easily adjusted in a few minutes, so that it may be used for either the right or left arm. The application of the splint is a very easy matter. The belt is fastened around the waist at a level with the iliac crests, and the suspenders then fixed in position and strapped so that they will support the weight of the arm when placed in the wire frame. The latter is then covered with a roller bandage, which extends back and forth from the wire on one side to that on the other. This bandage is applied loosely, which allows it to form a trough in which the arm is placed, its position being as shown in Fig. 2. As this splint is made adjustable in all directions, it seems especially adaptable for hospital use.

Esophagoscope.

DESIGNED BY DR. R. LEWISOHN, NEW YORK.

In this age of specialized medicine and surgery, men are devoting their entire attention to certain parts of the human body, and therefore laryngeal and bronchial cases are understood to belong in the sphere of the nose and throat specialist. It is different, however, with the esophagus and stomach. The surgeon as well as the internist considers such cases within his province. This work has received a great deal of attention during the last few years, and quite a number of special instruments have been devised for examination, operation, and treatment, and one of the most ingenious is the Lewisohn



Fig. 1. Rectangular telescopic esophagoscope (telescope opened).

esophagoscope (Fig. 1). This instrument consists of two parts, which are joined together at almost a right angle—the first, horizontal part, which is in the mouth of the patient during examination, and, second, the vertical part, consisting of a telescope, composed of six separate tubes, which may be pushed down into the esophagus as far as necessary. The horizontal part consists of two

sections which can be easily separated by traction in a horizontal direction. Each of these sections carries a semi-cylindrical canal, and when the two sections are connected the canals form a tube. In this tube is the spring that is necessary for the manipulation of the telescope. The spring is entirely outside of the main hori-

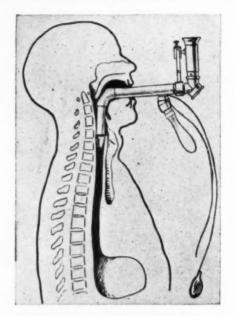


Fig. 2. Esophagoscope in position with telescope closed.

zontal tube, and does not in any way disturb the passage of the light rays. At the proximal end of the horizontal tube which is outside of the mouth is attached the illuminating apparatus, which consists of a lamp and condenser. A tungsten lamp containing three cross filaments is used, and produces a very intense light. Directly under the lamp a condenser is placed that concentrates the rays

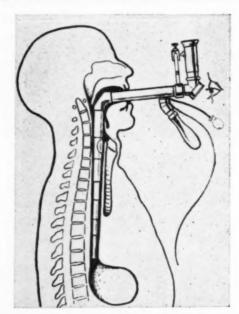


Fig. 3. Esophagoscope in position with telescope opened.

that fall on the mirror, which is movable on a horizontal axis. From this mirror the rays are thrown on a second mirror at the junction of the horizontal and vertical parts of the instrument. The second mirror intercepts the rays in such a manner that they fall directly downward in the telescope.



Are Our Nurse Training Schools Educative? 1

BY MARY ARD MACKENZIE, R. N.,

Superintendent Victorian Order of Nurses, Ottawa, Canada.

In this paper the writer may state a number of facts and ideas which have been presented elsewhere, but she is anxious to put the matter in the full light, so that something definite may be done, and done soon, to correct a condition of affairs which should never have come into existence.

Very much thought has been given to the nurse training school question, and all kinds of schemes suggested for the improving of the training, but practically no scheme has been considered seriously that really promises to solve the problem. In dealing with it, we feel that we must divest ourselves of all preconceived notions and go in with an open, unprejudiced mind.

Are our nurse training schools educative? Let us look for a moment at the meaning of education. "Education" is derived from the Latin root, "duco" (I lead or draw) and "e" (out), so education is a drawing out—a development of the whole being. When a woman enters for an education or training of any kind, she should have her whole being drawn out, developed, as her knowledge increases, and no course which does not make for that full development can rightly be called educative.

Now, with that as a guide, let us look at our nurse training schools. What is happening all over the country? The writer could name dozens of bright, promising women whom she has seen, filled with the missionary spirit, eager to do something to help someone to be better, happier, and healthier, who have entered on a training in the various so-called training schools, issue forth from these institutions warped, narrow, mercenary, and blase—all their ideals gone, and in almost every case gone beyond recall. To be very conservative, nine-tenths of the students who enter our nurse training schools come out after three years changed for the worse.

Now, why is this? Glance at the hours, glance at the drudgery, glance at the impossibility of keeping up with the ordinary means of culture—church, theater, lectures, music, art, mingling with different kinds of people, and exchanging ideas on literature, art, or science. How many nurses keep up their church life, keep up with their studies—even with their nursing studies—keep informed as to current events? How many keep up their correspondence with old and valued friends even? Very, very few indeed; so, on the most important side—the development of character—our nurse training schools are a woeful failure.

What about those on the professional side?—on the side of knowledge, pure and simple? Do our nurse training schools prepare the nurse for the full practice of her profession? Let us look—the training they receive is

¹Read at the annual convention of the Canadian Society of Superintendents of Training Schools for Nurses, July, 1914. merely in institutional nursing—that is, in ward nursing—and sometimes in operating room technic. How little preparation is given for private nursing, and practically none is given for the large field of public health and district nursing, social service work, and hospital administration. When we consider the failures in the many lines of nursing, we are surprised that there are not a great many more than there are.

Why has the nurse education been put on this basis? To be honest, we must answer, "in order to secure cheap nursing in the hospitals." For all these years our women who have desired to be equipped for their life-work have been exploited, so as to keep down expenses, and many a woman on leaving her school has felt herself cheated, deceived; she has asked for bread and received a stone.

What about theory? A lecture course is given? Oh! yes. By specialists in the various branches? Oh! no. A lecture course is given by doctors who are willing to do so in charity, and, like a great deal given in that way, many of the lectures would be much better undelivered, and these lectures are given to tired-out nurses who cannot grasp what is being put before them.

What is to be done? Establish nursing colleges or schools in connection with the educational system. Why has the education of the nurse been hidden away in a hole as something not to be mentioned?

These schools or colleges should be as separate from the hospitals as the medical schools. The students would obtain their practical training in the hospital, where a regular prescribed course should be given in all departments, under the direct supervision of experienced teachers, and it would be found that the average student would acquire skill—say, in the making of beds—in a much shorter time than under the present regime; so, too, with a great many other things.

In the schools there should be a regular staff of paid lecturers, and no longer would the pathetic and undignified sight be seen of student nurses holding out the hand to charity-that is, depending for their theoretical training on the kindness of voluntary lecturers. There should be a regular pass course, with certificate at end of examinations, practical and written, are passed. Then there should be honor courses or special courses in district nursing, public health work and social service, in hospital administration, and in the training of teachers of nurses, for which special certificates or degrees would be conferred. These certificates would be registered at the educational department, thus removing any need for further registration. The nurse coming forth would be a wellrounded-out woman, would be alert and ready for her life-work, and to take her place as a citizen-not weary, fainting and discouraged on the very threshold, cut off from her fellow men and women. Let her be apart, but in a broader and higher sense than that.

The decrease in the number of desirable applicants for training throughout the country is a silent protest against the worse than noneducative course which is being offered in our training schools. Never before in the history of the world did we need the really cultured women with high ideals, to train for all branches of public health service, as we do now. We must attract the right kind of woman, and in order to do that, we must prepare for her a truly educative course.

It may be difficult to get the whole machinery started, but it is possible, and it is imperative that something be done, and done quickly, to meet the demand for an educative nurse course and the demands for educated nurses to do the work which only such can do.

It is vain to attempt to "bolster up" the profession by "bills of registration" and similar means—the wrong is at the foundation, and we must go back and wipe out that wrong beginning, in so far as possible, and start with a clean slate.

It will cost money, but it will be money well spent. In each province the education department should make provision for the nurses' course. It should be part of the public school course in the preliminary stages—and already the minds of the people have been prepared for this by the report of the royal commission on vocational training—then, in the more advanced stages, provision would be made for the courses in public health nursing, social service, training of teachers of nurses and hospital administration. There would be chairs of nursing established in our universities. There will doubtless be a great deal of planning necessary, or readjusting, but that must be faced.

To sum up, the training schools fail in that they do not educate their students—they fail on the professional and on the character-building side. The profession for that reason is not attracting the kind of women who are needed for all branches of nursing. There are hundreds of women desirable in every way who would enter for a nurse training course every year if the training schools were as they should be. Not only is the profession losing these desirable candidates, but a decided wrong is being done the women in that they cannot obtain an efficient training in that line of activity in which they feel they could best work out their destiny.

So, most earnestly, do we entreat the educators, those who know and deplore the defects in our present system, and those who are interested in the training of the women of the land, to do what they can to have this state of affairs corrected, for it affects the whole nation in no small degree.

Ophthalmia Neonatorum and the Nurse's Duty.

There are so many nurses who do not understand their duties and responsibilities regarding the care of the eyes of new-born infants that some associations of nurses and some state boards of examiners for the registration of nurses have resolved to let no opportunity pass without impressing the necessity for study of the laws regarding them.

The Society for the Prevention of Infant Mortality has been of the utmost service to the country at large in this respect. Indeed, if the whole truth were known, it would doubtless be an established fact that their crusades were instrumental more than any other one force in securing the enactment of the present laws for the prevention of blindness among babies.

In Massachusetts, where the law is drastic (not more so than it should be), and its enforcement prompt, there have been great reductions in the number of infants whose sight has been lost through ophthalmia neonatorum. To quote the law:

"Should one or both eyes of an infant become inflamed, swollen, and red, and show an unnatural discharge at any time within two weeks after its birth, it shall be the duty of the nurse, relative, or other attendant having charge of such infant to report in writing, within six hours thereafter, to the board of health of the city or town in which the parents of the infant reside the fact that such inflammation, swelling, and redness of the eyes and unnatural discharge exist. On receipt of such report, or of notice of the same symptoms given by a physician as provided by the following section, the board of health shall take such immediate action as it may deem necessary in order that blindness may be prevented. Whoever violates

the provisions of this section shall be punished by a fine

of not more than \$100.

"If one or both eyes of an infant whom, or whose mother, a physician is called to visit become inflamed, swollen, and red, and show an unnatural discharge within two weeks after the birth of such infant, he shall immediately give notice thereof in writing, over his own signature, to the selectmen or board of health of the town; and if he refuses or neglects to give such notice, he shall forfeit not less than \$50 nor more than \$200 for each offence."

In case the infant is born in a hospital, the hospital is held responsible with the physician in charge of the case for the care and attention given the eyes of a baby at birth, for the law distinctly says:

"Each licensee shall be responsible for the use at every birth, for the prevention of ophthalmia neonatorum, of either the 1-percent solution of nitrate of silver furnished to physicians by the state board of health, or some similar

preparation having the approval of said board.

"A licensee shall send notice in writing to the state board of health, within six hours after the discharge from his lying-in hospital, of an infant whose eyes show or have shown the presence of ophthalmia neonatorum, stating the destination of said infant. A duplicate of the notice shall at the same time be sent to the state board of charity."

It is only within recent years that hospitals maintaining wards for the care of maternity cases have been obliged to be licensed by the state, but for the enforcement of the above laws it became necessary.

There are other safeguards of the infants' welfare found in these laws, and hospitals would do well to be correctly informed concerning them, but ophthalmia neonatorum is the one about which the nurse should be most concerned.

It is sometimes difficult for the nurse to fulfill the law when the physician in charge of the case objects to the use of any of the forms of treatment mentioned therein. No advice can really be given her in such an event, excepting that she should be tactful and altogether courteous, and, above all, not dictatorial in the least. A lawabiding nurse once said to an eminent physician, "It is rather too bad that the law puts so much authority in the hands of the nurse, for it seems to me she has it within her power to cause the physician embarrassment, if nothing more." "Not at all," said he, "let him be informed of the law and obey it; the time for that form of courtesy has gone by, and the sooner he understands that the world is not going to take off its hat to him simply because he is a doctor, the better for him and the whole medical profession."

Notwithstanding this argument, it would be a sad time if the nurse were to forget that the physician is the commander-in-chief of the army in which she is only a private.

Doubtless most of the states have laws regulating the care of the new-born, and the nurses practicing in those states ought to faithfully obey them. In the absence of laws, they can still do much by absolute cleanliness and watchfulness. Nurses must remember that any infant whose eyes show the first indications of swelling and redness must have *immediate* attention. Such a condition must be reported the same minute that it occurs; the results are apt to be too serious to admit of waiting to see how it may be later.

The Red Cross.

To those across seas there has been no more convincing evidence of the neutrality of our country as well as of Christian charity toward the present European warfare than the dispatch of the Red Cross ship to aid in the care of the sick and wounded of all classes of belligerents. There have been many among the left-at-home friends of the nurses who expressed doubts of the wisdom of sending nurses into the midst of so much danger when possibly their services were not really demanded. In this the friends were guided wholly by impressions received from imperfect and exaggerated newspaper accounts. But, no matter what may have been the ideas of friends, the nurses themselves never had any such doubts.

They long ago learned that they were in a sense soldiers, that they were under the same kind of discipline—that it is "theirs not to reason why," but to go where duty calls them. They fully appreciated this in becoming members of the Red Cross, and, like the true soldier, each was anxious to be in the midst of the fray, and each considered herself favored in being among the first called.

Telegrams, expressive of eagerness for the work, have been received by the stay-at-homes from the valiant ones who have gone, and even the most skeptical have now come to believe in the usefulness of the expedition and to be proud of a connection with the nurses in any way, whether by ties of blood relationship or professional amity.

A publication, not professional, expresses its admiration and gratitude thus:

"The aspect of the Red Cross ship as it steamed out of the harbor was a peculiarly inspiring, and yet moving and pathetic, sight—inspiring because of the beneficent impulse of the people who had voluntarily fitted out the ship and sent it on its mission of mercy, and pathetic because of the need so loudly crying for help from the other side of the ocean. God bless it and its beneficent errand was the prayer of many hearts. We were glad we could show this token of brotherhood and human sympathy in the dark hour of the nations' life-and-death struggle—one small token of the spirit of Jesus Christ, who came to save and not to destroy men, in an hour when his precepts and example are put to scorn.

example are put to scorn.

"We are thankful there are brave men and women ready to adventure their lives on the battlefield to minister to the dying and to gather up those who might be saved. The profession of the good doctor and the devoted nurse receives special illustration in this hour. It is set apart from all other professions for its saving power, that takes no thought of self, and is commissioned to the whole of humanity."

It is altogether probable that this is but the first expression of sympathy the American people will feel called on to offer the warring nations. There are yet to be met and combated the dreadful ravages of pestilence almost sure to follow in the train of war. May we be found ready and willing in our contributions, whether of services as Red Cross nurses, or of services at home which permit the country to spare those who go, or of our means which aid in furthering the cause.

Efforts are being made among nurses to collect something substantial for the Red Cross work, and one association is known to be active in its preparations for doing so. Surely every man, woman and child may be a force to assist in allaying the pain of this disastrous war. It may be by actual service as a Red Cross worker, it may be by contributions of money from the fullness of great fortunes, it may be by gifts from more modest means, and it may be by simple influence on those who have not yet given the matter much thought.

It is now the privilege of the American people to make a concentrated effort for healing and consolation by strengthening in any and every way the hands of the Red Cross.

American Red Cross Nurses.

Feelings of pride were mingled with grief by all stayat-home nurses who bade adieu to their sister nurses sailing on the Red Cross ship Hamburg from Brooklyn, September 13—pride in the splendidly organized and equipped corps of physicians and nurses who sailed away to carry succor alike to the sick and injured, for the success of whose cause there is a secret hope and an underlying and unexpressed sympathy, as well as to the sick and injured from the ranks of those accounted their enemies. It has been said that "greater love hath no man than this," etc., and there could be no clearer application of the truth than that being made by these 150 Red Cross nurses in their perilous undertaking.

Our grief is caused by contemplation of their hazard and the events which call for it. They go with the best wishes and hopes and prayers of all who perforce must remain at home for one reason and another. They will be successful, and through their efforts will the nations of the earth witness the sincerity of our country's claim that we care not at all for conquest nor extension of territory, but much for the general welfare of the world.

For years the people of the warring nations have come to our shores, hoping to find here a place of safety from the trials of the home land. For the time being they are detained, and we send help to them. Verily our people are a charitable people.

The nursing service of the American Red Cross is praised in other countries and its prestige spoken of as unique. This is doubtless due to the fact that it is organized on professional lines. Much credit is due its committees who have had in mind only the promotion of the best interests of the organization and have worked hard to accomplish it.

Each applicant to the Red Cross must furnish convincing evidence of her fitness for the service. She must be above reproach as to character and reputation, well trained and physically fit. She is encouraged to show an activity and enterprise for the progress of her profession by having connected herself with one or more organizations of nurses for that purpose. A nurse who can pass these requirements may be admitted wholly upon her merit and without favor.

The European war has stirred the nurses as nothing else has ever done to become members of the Red Cross. During the last few weeks they have been scurrying to increase their eligibility by securing membership in their alumnæ or state associations. Nearly all were held up by the fact that it has been the season of least activity in all such organizations. The moral is simply that "in time of peace we must prepare for war."

In this crisis all cannot sail away in ships or be able to work on the field of battle, but each one of us can contribute something if it be only to assist in places made vacant by those who have gone. Humanity demands that we, as well as they, shall do all in our power to relieve suffering. We are grateful for the opportunity and that we belong to a class of workers who are and must be impartial in our choice of work, that we can care alike for friend or foe and rejoice in the improvement of the one as well as the other.

Death of Miss McIsaac.

Miss Isabel McIsaac, for some years past superintendent of the Army Nurses' Corps, died in Washington September 21st, and was buried at Waterloo, Iowa, her old home. For many years Miss McIsaac was superintendent of the Illinois Training School for Nurses, and she served a term as president of the American Nurses' Association and as interstate secretary. She was one of the best known and beloved nurses in the United States.



Drip Pan for Water Coolers.

To the Editor of THE MODERN HOSPITAL:

Tell me, please, where I can get a drip pan in which to set the water coolers, so the moisture accumulating on the outside of the can and running down on the tables and floors will be caught and directed into the drip pail under the faucet in front, or something like this. I know they must exist, as I have seen them in hotels.

M. S. TYE,

Superintendent Sparks Memorial Hospital, Ft. Smith, Ark.

I do not know where you can get a drip pan such as you want. I have gone to a good deal of trouble to find one for you, but there seems to be nothing on the market. Two houses that I thought would certainly carry them tell me that they have made a number in their machine shops, but only on order of a customer, and they say that what they make is practically this: a round sheet of copper or nickeled copper big enough to take in the cooler and the faucet; a rim 2 inches high is placed around this sheet, crimped at the top to give strength, and crimped on tightly to the sheet, so that it is simply a big pan with a rim 2 inches high, set either on the floor under the cooler or set immediately under the cooler on the stand. You can give an order for such a device to your local tinner, who should make it just as well as, and perhaps a good deal cheaper than, I could have it done for you. I called the attention of two or three large houses to your statement that you have seen these pans in hotels, and they say that they have been made on the customer's order, and there is nothing of the kind made up in stock anywhere.

Discolored Laundry Fabrics.

To the Editor of THE MODERN HOSPITAL:

What causes fabrics to turn gray after having been to the laundry a few times? We seem unable to prevent this in our hospital, and our laundry forewoman says that all hospital white goods do so, which we know is not true; but what can we do about it?

A SUPERINTENDENT.

This question was submitted to Mr. C. M. Leary, sales manager of the Troy Laundry Machinery Company, who

makes the following reply:

You are right in your suggestion that hot water will set dirt, stains, etc., in goods when first placed in the machine. Water should always be cold or lukewarm, and by lukewarm we mean not over a temperature of 90 to 100° F. Poor rinsing after the goods have been washed leaves the soap in the goods, which eventually causes them to turn gray. Insoluble alkalies should never be used in a laundry, for it is next to impossible to rinse this out of the goods, causing deposits of both alkali and soap. The excessive use of strong and harsh alkalies with soap and improper rinsing, is largely the cause of dark or discolored linen. We give you the following formula for removing these deposits and discoloration:

1. Run lukewarm water in washer to show 6 inches in inside cylinder; run ten minutes; discharge and drain well.

- 2. Run hot water in washer to show 2 inches in inside cylinder; add two quarts of acetic acid; run twenty minutes; discharge and drain well.
- 3. Run hot water in washer to show 2 inches in inside cylinder; add 2 to 5 pounds Wyandotte Yellow Hoop, either dry or in solution; turn on the steam and run from thirty to forty minutes, keeping the lid closed; discharge and drain well.
- 4. Run in the washer hot water to show 6 inches in the inside cylinder; run ten minutes; discharge and drain.

5. Repeat the above rinse.

- 6. Run in washer hot water to show 2 inches in inside cylinder; dissolve 8 ounces of oxalic acid in a separate pail used for this purpose only; pour this solution in the machine as the cylinder turns toward the operator at the top; turn on the steam and run for twenty minutes; discharge, drain well, and follow with two hot rinses.
 - 7. Blue in the usual way.

Method of Making the House Count.

To the Editor of THE MODERN HOSPITAL:

I would like to ask if you can give me the proper way of taking the daily census of patients in a hospital? I will give you the method we are now using, which is as follows: At midnight the night superintendent takes the census of all the patients in the house at that time. The following morning we add to this number the patients discharged the previous day. This latter number includes all cases which may be admitted and discharged during the same day, as well as all other discharges. The resulting total gives a number, of course, which is greater than the actual number of patients in the hospital at any particular time during the twenty-four hours, but is the true number of patients that have been in the house and treated as house patients within the twenty-four hours. Are we giving our daily census correctly? If not, where is the error? H. E. BISHOP.

Superintendent Robert Packer Hospital, Sayre, Pa.

According to your description of your method, you are giving yourself a little the best of the house count, and I think you will find that you are taking credit for more patients than are actually passed through the house.

My method has been to take the house count at midnight and not at any other time. The work is done by the night clerk. He has before him the duplicate admission cards for the day and also the discharge cards. The training school usually makes its own house count for purposes of the distribution of patients among the nursing force, and this count is usually handed into the main office the last thing before the day nurses go off duty. This nursing house count is made up by the head nurses in the different divisions, and it is a rather necessary part of the nursing operations of the institution, but for the purposes of the business office it acts as merely a check. Every once in a while some little accident happens to throw the house count off; it may be in the transfer of a patient from one part of the house to another; it may even happen that a patient is rushed into the institution in an emergency and the proper admission cards may not have been made out-the nurses' house count would catch that

In carrying out the technic of the house count it is a part of the night clerk's duty to carry out the policy of the hospital in charging the house count with the proper number of patients. For instance, if a man comes in at 12 o'clock noon and goes out at 12 o'clock the next day, he would not be charged for two days; but, if he is in the house for more than twenty-four hours, he would be charged as a patient for two days. You can see, if we carry out this policy, we arrive at a better understanding of the number of patients that we are caring for than if

you charged the house count with a twenty-four-hour patient for the day on which he came in as well as the day on which he went out.

In the private pavilion of a hospital I think it is only fair to charge a patient for two days if he is in the house for longer than twenty-four hours, because we must, at the end of twenty-four hours, make all of our arrangements to take care of him for another twenty-four hours.

We can charge private patients for fractional days if they are in the hospital less than a week, but we would not charge for fractional days if they are in the hospital a week or longer.

I think the midnight count, without the additional morning count, makes a fairer house count than if we made two counts at different times of the day.

Per Capita Costs in Tuberculosis Hospitals.

To the Editor of THE MODERN HOSPITAL:

Will you kindly give the per capita cost of patients in tuberculosis hospitals? Our board of control thinks our cost of approximately \$2 per day is too high, and I am cutting as hard as I can without robbing patients of something they really need.

A SUPERINTENDENT.

Figures of per capita cost are wholly worthless unless one can have all the data that affect them. For instance, some sanatoriums have their own milk and eggs and vegetables; some of them accept only incipient or "up" cases, and these do not require so much nursing; some hospitals do not run full, so the per capita is increased; but, most important of all, some sanatoriums are unspeakably inefficient in all their relations to the patient, and are a disgrace to the communities in which they are conducted.

I think your board would be in better business if they questioned the kind of service you are giving, and took the trouble to compare your administration in this respect with other hospitals of the same character. No one can say that you are spending too much without knowing all the facts. You had better get your board to let you visit two or three other hospitals, where you can make a careful analysis. In the meantime, here are a few figures of per capita costs in good hospitals, but I warn you these figures are worthless for the reasons given:

cool down to 120° F. or lower, and the curd is added according to the directions on the bottle. If it is added to milk hotter than 120°, its effect will be lost, because a greater heat than that destroys the fermentative properties of the rennet. Better let the temperature go down until the milk is a little above blood temperature, then add the chymogen, bring the temperature gradually up to about 120°, and hold it there for half an hour to an hour, keeping the milk constantly agitated to prevent the curd from forming in large, thick, indigestible lumps.

Treatment of Cork Carpet.

To the Editor of THE MODERN HOSPITAL:

Would you kindly inform me what would be the best substance to use in polishing a cork flooring that has been used for some considerable time? I think perhaps something ought to be used as a filler before the polishing is done. I will be grateful to you for this information.

HELEN MACMURCHY,

Inspector of Feeble-Minded Department of the Provincial Secretary, Toronto, Ontario.

The problem of old, dusty-looking and checked cork carpet, with the ever-widening crack at the seams, has been met by the writer in the way described below: Close examination demonstrated that it was at the edges and seams that wear first appeared, and also that the cork crumbled away as rapidly as the hemp back became rotten. All back found water-stained from mopping was more or less rotten, and all back unstained by water was perfectly sound, even in carpet many years old and rotted to the extent of 6-inch gap at seams. All of our carpet had lost its finish, much of it checked, and some of it beginning to crumble on the surface even where the back was sound. From the findings it seemed advisable to protect seams and edges from water. The edges of all pieces were trimmed to the sound back, and carefully cut to give as tight seams as possible, and, where the carpet did not entirely cover the floor, hardwood strips 1 inch wide and the thickness of the carpet were nailed at the edge. All seams and cracks between the carpet and the wall or wood strips were then filled with the waterproof cement used to cement battleship linoleum upon a concrete base.

Name of Hospital.	Capacity.	Average.	Cost per day.	Classes of patients.	Cost includes.
Walker State, Minnesota	120	120	\$1.81	All stages.	Renewals.
Cincinnati City	350	316	.88	Advanced.	Renewals and re-
Rhode Island State	142	135	1.37	Incipient.	pairs. Minor repairs.
Washington, D. C., District	120	95	1.41	All stages.	
U. S. Naval, Las Animas, Colo	240	180	1.89	All stages.	Does not include officers' pay.
Colony, Ottawa, Ill	100	50	3.20	All stages.	Everything.
National Jewish, Denver	130	112	1.47	All stages.	Renewals and re- pairs.

Rennet Ferment.

To the Editor of THE MODERN HOSPITAL:

Your article, "What is sterile milk?" is to me, though a layman, as lucid as could be wished. I would appreciate it very greatly if you would reply to my question, "What is rennet ferment?" I purchase for a hospital, and am consequently interested.

C. S. CLARK, JR.,

580 St. Nicholas Avenue, New York.

Rennet ferment is a powder made from the rennet of the stomachs of young animals—calves, pigs, and lambs. It is made chiefly by the Armour Company, Chicago, in the department of chemico-physiology, and is sold as chymogen. It has the property of changing milk into a curd. The milk is first boiled and is then allowed to Over all seams the brass strips, made especially for this purpose, were then nailed. These produced a distinct improvement in the appearance of the floor, as the pieces had been arranged so as to make the seams symmetrical and regular in the room. The thresholds were finished with a brass molding designed for the purpose and patented by a local firm. This molding has a wedge-shaped wooden strip to be laid on the floor at the edge of the carpet. Then a heavy brass strip, rolled so as to make one edge lie flat on the floor, the other edge to lie flat on the top of the carpet, and to fit the slant of the wooden strip in the middle, was nailed down firmly. Heavy trucks can then be run up onto the carpet without any possibility of wearing or breaking the edge.

To waterproof the carpet and prevent further disintegration of the surface, a thin coat of shellac was applied. This was almost entirely absorbed into the cork, but a second thicker coat made the carpet smooth and glossy. This finish lasts longer on the carpet than a shellac finish on a floor, and occasional renewals will keep up a good appearance and add greatly to the life of the carpet. An oil mop can be used to advantage on the shellaced surface. This is a saving in the cleaning, as nothing except a scrub will make the old cork surface even moderately presentable.

Our odd pieces we cut into blocks two and a half feet square and used them in a kitchen. All seams were cemented and covered with brass strips, and the whole finished with shellac, as described above. The effect of the brass-bound squares was very pleasing, and the cost

decidedly less than new linoleum of any grade.

The cost of the patented brass thresholds was 15 cents per foot, cut at the factory to fit and laid. The cost of the brass strips for binding the seams was 7 cents per foot laid. The cost of the oak strips was 1½ cents per foot laid.

The use of shellac on linoleum and probably on cork carpet is nothing new, yet there may be those who do not know how much it can improve both wearing quality and appearance. It is entirely possible that an additional finish with varnish or wax will add to the appearance. We have not experimented further than the use of shellac. It is very likely that the foregoing process could be used to the same advantage on all kinds of cork floor coverings.

A. R. WARNER,

Superintendent Lakeside Hospital, Cleveland.

Raw Food Cost in Schools.

To the Editor of THE MODERN HOSPITAL:

Can you give us some idea of the amount and value of raw food consumed by young people at boarding schools, and something about the character of the foods used in the average girls' or boys' academy?

A MATRON.

Lake Forest Academy, at Lake Forest, Ill., is one of the most carefully conducted institutions, at least in the central West. The director of service is a highly trained hospital nurse, steward, and executive officer. His figures of cost ought to carry a good deal of weight. The following is a table that he has transcribed from his books. It should be said that this group of 130 young people were boys ranging from 12 to 18 years of age. Mr. P. W. Behrens, the superintendent, states that in the girls' department the figures of cost are about the same, for, though young women consume less of the substantials, and especially of meats, they consume more salads and desserts, which about evens the cost column:

RAW FOOD FOR 130 PEOPLE FOR ONE MONTH.

Items.	Quantity.	Perperson Tot	al cost
Milk	2026 quarts	15.6 quarts \$	136.75
Cream	252 quarts	1.9+ quarts	108.00
Butter	319 pounds	2.45 pounds	98.89
Eggs	300 dozen	2.3 dozen	88.20
		11.16 pounds	234.84
Meat, salt		3.48 pounds	83.35
Fish and sea food		2.91 pounds	74.70
Flour		9.8 pounds	36.25
Cereals		23e	30.00
Crackers		9e	11.50
Molasses, syrups, sugar			60.00
Coffee and tea		1½ pounds	50.00
Chocolate		1/2 pounds	15.00
Fresh fruit			50.00
Vegetables			70.00
Potatoes	32 hushels	1 peck	40.00
Canned vegetables		1 peek	50.00
Sundries, kitchen and bakeshop.			100.00
Total cost			,337.48
Cost of 130 persons per month			.337.48
Cost of each person per month			
Cost of each person per meal (11			.11
161/2 barrels.			

These figures include only raw food, and take no account of kitchen help, dining room service, or cost of preparing or cooking food. The above items just about double the cost of feeding the group, making the cost per meal, including service, 22 cents.

LETTERS TO THE EDITOR

About Water Bugs and Old Rubber.

To the Editor of THE MODERN HOSPITAL:

Will some of your readers kindly give me a sure and quick method of getting rid of roaches (water bugs) in a hospital of 75 beds? I would also like to ask what disposition can be made of rubber goods (hot water bags, rubber rings, etc.) which have outlived their usefulness? I have been told that there is a sale for the latter, as the rubber can be melted and used again for an inferior class of goods, but so far have not been able to locate a purchaser.

ALABAMA.

Care of Linoleum-Dr. Washburn Corrects an Error.

To the Editor of THE MODERN HOSPITAL:

I notice that in your article on the care of battleship linoleum you state that the Massachusetts General Hospital uses spar varnish on its linoleum floors. This is something which we have never done, nor do I personally believe that it would result in a good floor. We have always used our regular floor polish of the following composition (with directions for making):

 $\begin{array}{lllll} \textbf{Paraffine} & & & 18\% & \text{pounds} \\ \textbf{Yellow} & \textbf{wax} & & & 12\frac{1}{2} & \text{pounds} \\ \textbf{Turpentine} & & & & 50 & \textbf{gallons} \end{array}$

Dissolve the wax and paraffine in the turpentine in a jacket kettle. Avoid using open flame. When the solution is cold, add 1 ounce of ammonia water to each pint. The combination makes a total of about sixty-two gallons.

A small quantity of this is spread on the linoleum once a week and rubbed in with a heavy weight, and later, when dry, polished with a flannel.

When the floor is first laid, it is necessary to repeat this polishing frequently until the required finish has been obtained.

F. A. WASHBURN,

Administrator Massachusetts General Hospital.

The Gale Hospital at Haverhill, Mass., is being reconstructed to meet the demand for additional room and other increased facilities.

The Sisters of Mercy, the oldest order of nuns in Chicago, recently celebrated in the institutions of which they have charge the sixty-eighth anniversary of their arrival. At Mercy Hospital the celebration was marked by the placing of a tablet to the memory of the late Ferris S. Thompson. Mr. Thompson, whom the sisters never saw, died in France two years ago, leaving the hospital \$300,000. The only explanation given by Mr. Thompson in his will was that he desired to remember an institution that had been kind to a friend of his, and it is said that the sisters of Mercy do not yet know who the friend was. The Thompson bequest made possible the erection of a \$250,000 training school for nurses, which is now in operation and affiliated with the Northwestern University. Mercy Hospital was founded in 1850. At that time the institution was known as the Illinois General Hospital of the Lakes. Medical students from Rush College did the first nursing, and later the sisters took up the work. The hospital has been closely associated with Chicago history on account of the aid it has rendered at critical times, such as in the days of cholera, during the civil war, and at the time of the great fire. The original group of the Sisters of Mercy went to Chicago from Pittsburgh in caravans, arriving September 24, 1846, and were engaged in teaching for four years.

ASSOCIATED OUT-PATIENT CLINICS OF NEW YORK.

Movement Aiding Hospitals, Through Their Dispensaries, Toward General Recognition as Chief Public Health Centers.

BY OUR NEW YORK CORRESPONDENT.

The commendable educational campaign of the past decade in hygiene and sane living, so thoroughly carried on by national, state, and civic philanthropic associations, aided by health departments, is inevitably leading the general public to look on dispensaries and out-patient departments of our hospitals as the chief health centers of the community. Dispensaries must soon be prepared to not only serve as clearing houses for admission to sanatoriums and hospitals, but as centers for sociological and educational work, and distributing points through which charitable and philanthropic agences may render financial aid to poor patients and their families in dire need.

The organization of the Associated Out-Patient Clinics of the City of New York two years ago to coordinate the work of existing dispensaries and out-patient clinics was in recognition of this trend toward a broader field. In addition to promoting coordination and cooperation of effort, the association includes in its general aims the elimination of unworthy applicants for treatment, and the promotion of not only proper standards of treatment, but also of economy and efficiency in dispensary management. The New York association has now more than forty dispensaries and out-patient departments pledged to conform to its rules and recommendations. studies and surveys of a general administrative nature were first made under the supervision of the executive committee. Sections corresponding to the various subdivisions of out-patient departments were eventually organized to prepare recommendations for efficient administration. A glance at the recommendations of one of these sections will convince all dealing with the problems involved in the administration of clinics that no effort has been spared in making a thorough analysis.

RECOMMENDATIONS OF THE SECTION ON PEDIATRICS.

The standards for class "A" are as follows:

1. Efficient medical treatment at all seasons of the year, which can be possible only (a) if no more than 6 patients, old and new, per man per hour are admitted, and (b) if arrangements are made for the presence of a physician-incharge or his first assistant during every clinic hour throughout the entire year.

2. A nurse in attendance during all clinic hours, and a visiting nurse exclusively attached to the clinic. When practicable and possible, the same nurse should combine

the two functions.

3. At least two examining rooms and an additional room for teaching where teaching is done at the clinic.

4. An isolation room for contagious disease cases.

5. A competent assistant, preferably paid, present during all clinic hours, one of whose duties should be the segregation and isolation of contagious cases.

Proper laboratory facilities for the immediate examination of specimens of blood and urine at the clinic,

or at least in the dispensary or hospital building.

7. Proper equipment should consist of (a) proper examining table, (b) proper scales for infants and children weighing up to 100 pounds, (c) measuring instruments, such as calipers, rulers, etc., (d) proper light for nose, ear, throat, and head work, (e) proper desk and chairs, (f) proper ventilation, plumbing, and light, (g) proper surgical instruments, (h) walls and floors easily washed,

(i) filing cabinets for history cards, (j) reference blanks for patients referred to other departments of the institution or to other institutions, (k) facilities for x-ray work, (l) printed diet lists and printed hygienic instructions for children over a year.

8. Special room (or special time) for treatment of

whoopingcough cases, if such cases are treated.

9. An infant milk station at the clinic or close cooperation with a department of health milk station, arranged in such a way as to be mutually agreeable to the clinic and the department of health.

10. Special provision for vaginitis cases, if they are not taken care of in some other department of the institution.

The standards for class "B" are as follows:

1. Efficient medical treatment at all seasons of the year, which can be possible only (a) if no more than 6 new patients per man per hour are admitted, and (b) if arrangements are made for the presence of a physician-in-charge or his first assistant during every clinic hour throughout the entire year.

2. Space for two separate examinations and an additional room for teaching where teaching is done at the

clinic.

3. An isolation room for contagious disease cases.

4. Proper laboratory facilities for the immediate examination of specimens of blood and urine at the clinic, or at least in the dispensary or hospital building.

5. A competent assistant, preferably paid, present during all clinic hours, one of whose duties should be the

segregation and isolation of contagious cases.

- 6. Proper equipment should consist of (a) proper examining table, (b) proper scales for infants and children weighing up to 100 pounds, (c) measuring instruments, such as calipers, rulers, etc., (d) proper light for nose, ear, throat, and head work, (e) proper and plentiful supply of linen, towels, sheets, etc., (f) proper desk and chairs, (g) proper ventilation, plumbing, and light, (h) proper surgical instruments, (i) walls and floors easily washed, (j) filing cabinets for history cards, (k) reference blanks for patients referred to other departments of the institution or to other institutions, (l) printed diet lists and printed hygienic instructions for children over a year.
- Special provision for treating whoopingcough cases, if such cases are treated.
- 8. Special provision for vaginitis cases, if they are not taken care of in some other department of the institution.

The standards for class "C" are as follows:

- 1. Efficient medical treatment at all seasons of the year, which can be possible only (a) if no more than 10 patients, old and new, per man per hour are admitted, and (b) if arrangements are made for the presence of a physician-in-charge or his first assistant during every clinic hour throughout the entire year.
 - 2. A single room, large, airy, and well lighted.
 - 3. An isolation room for contagious diseases.
- Proper laboratory facilities for the immediate examination of specimens of blood and urine at the clinic, or at least in the dispensary or hospital building.

At Decatur, Ill., friends of the Decatur and Macon County Hospital recently adopted a novel method of raising the funds needed to complete and equip the new building in course of construction for the hospital. A corn carnival, attended by visitors from all parts of the county, as well as by the citizens of Decatur, was being held in the town, and everybody was requested to save 50 cents out of the money he had allowed himself for entertainment and amusements and contribute it to the hospital fund. It was estimated that, in the event the plan was carried out successfully, several thousand dollars would be secured.

NEW YORK'S LOWEST BABY DEATH RATE.

Supervision of Expectant Mothers by the Milk Committee Saved 10 Percent of Infants Under One Month Old.

BY OUR NEW YORK CORRESPONDENT.

New York City is justly proud of demonstrating to the world the possibility of a continued, steady decrease in her infant death rate. Publication of the fact that Greater New York made a reduction last year in the actual number of infant deaths over her low record of 1912, while in Chicago, Philadelphia, Detroit, Cleveland, St. Louis, Baltimore, Pittsburg, Buffalo, New Orleans, and Toledo an actual increase occurred, has stimulated nation-wide interest in her activities and methods of dealing with this perplexing problem.

It is ridiculous to attribute results accomplished to favorable weather conditions, or to the work of any one agency. This truly remarkable culmination has been realized through the combined efforts of all public and private agencies, cooperating and working along lines that focus on the baby and his environment. The New York Milk Committee has been in the foremost rank of these organizations for the past eight years. This committee has been unremitting in its fight for the reduction of infant mortality through improvement of the milk supply, education of mothers, and by stimulating closer cooperation.

The National Commission on Milk Standards has rendered valuable service to the committee in its program for improvement of the milk supply. The work of the commission has been indorsed by the American Public Health Association, American Veterinary Association, and the International Milk Dealers' Association, and the changes brought about in New York City's regulations closely conform to their recommendations.

The Department of Health of New York City has cooperated and received valuable assistance from the milk committee's investigation of icing of milk in transit, short-measure milk bottles, transfer of milk on street, milk served at school lunches, and hospital milk supply.

The prestige and influence of the New York Milk Committee was demonstrated last February by the cordial response of the governors of the eastern and middle states to their suggestion of a conference to consider improvement of state laws for the control of the milk industry and suppression of bovine tuberculosis. Delegates, representing respectively departments of health and agriculture and the milk industries of their states, met at the Academy of Medicine and approved of practically all the recommendations of the committee. A constructive legislative program, aiming at a more adequate system of state supervision of milk supply, was the result of this conference.

The committee has been represented at all the principal national and international conventions dealing with infant mortality. They keep in close touch with the fifty-five municipal milk stations with a view to widening the scope and increasing efficiency, and by independent visits and reports actively cooperate with the director of the Division of Child Hygiene of the New York Health Department. These municipal milk stations today sell the bottled pasteurized milk in whole form, and the mothers are taught to modify it at home. The old milk stations, some of which still exist, sold, at low price, milk already modified to feeding formula. Weekly clinics are now held at the stations by physicians, and the nurses in charge give instructions to mothers on all matters pertaining to infant care.

The committee has been active in the inauguration of "better baby contests," and prepared, in cooperation with other agencies, a national standard score-card. They

strongly advocate the scoring of babies from a health standpoint, and offering prizes for excellence as a valuable means of educating mothers and bringing them in closer touch with infant welfare societies.

Efficiency of the committee's methods of handling problems of infant mortality can best be demonstrated by following a little in detail one line of recent activity. Investigation and analysis of infant mortality reports of the New York Health Department, while proving a steady decrease since 1910 in deaths of babies under one year of age, disclosed the fact that one in every twenty-four born alive in Manhattan failed to attain one month of existence. The failure of infant welfare agencies to reach babies under two months old, the refusal of mothers to enroll them at the milk stations, and the firm belief that this early mortality was largely due to conditions acting on the baby at or before its birth, led the committee to undertake the following experiment:

Work was begun in one upper and four lower East Side, crowded neighborhoods with a staff of six nurses, one supervising nurse and a physician. Expectant mothers were enrolled largely through the municipal milk stations; the nurses listed many by canvassing the districts, and large numbers were referred to the committee's staff through hospitals, social settlements, churches, schools, and charitable organizations. As soon as possible after registration, detailed histories of previous pregnancies and social conditions were obtained. Mothers were visited every ten days, and the nurse began a systematic course of instruction, keeping in mind the particular conditions present in each individual case. This instruction covered diet, regulation of bowels, kidney function, clothing preparation for confinement, baby's outfit, bathing, care of new-born, care of breasts, danger signals of pregnancy, and how to meet emergencies. Abnormal cases were at once referred to the committee's physician, who took immediate steps to meet each special requirement. New districts were opened, nurses added to the field staff, and the extensive study continued until the committee had 2,644 cases on which to base a report. Results showed the still-birth rate among supervised cases 39.8, while for the same period in the Borough of Manhattan it was 47.5 in spite of the well-known fact that 50 to 60 percent of the still-births are not reported. The death rate of babies under one month for Manhattan was 40 per thousand, while the rate among cases receiving prenatal care was 29.9.

The ultimate aim of this demonstration by the committee was accomplished in securing the adoption, by the Health Department, of these practical working methods as an extension of its infant milk station work.

The committee's part in creating the "Babies' Welfare Association," an organization which last year became a well-developed feature in the work for the reduction of infant mortality, is worthy of mention among its most important recent achievements. This association, a federation of ninety organizations, is increasing the general efficiency of infant welfare work in New York City, and affords a means for facilitating direct cooperation of the New York Milk Committee with every other agency in the field.

The new building being erected for the Englewood Hospital, Englewood, N. J., will be three stories high and of Harvard brick, with stone and terra-cotta trimmings. It is to contain a children's ward, a maternity ward, nursery, special operating room, and some private rooms and nurses' rooms, and also the necessary service departments. Liberal provisions are being made for linen closets, and there will be on each floor a dryer for warming and drying the bed clothes. An electric elevator large enough to accommodate a stretcher will be installed.

PAY OF BOSTON HOSPITAL EMPLOYEES.

All Municipal Institutions Increase Salaries from Twenty to Thirty Percent.

A general salary increase has gone into effect in the municipal hospitals of Boston. The list which follows will be interesting for comparison:

Thirty women at the City Hospital, employed as scrubbers, will receive an increase of pay from \$5 a week to \$30 a month. The table girls, 12 in number, will receive an increase from \$14 to \$20 a month; the 12 chambermaids, from \$15 to \$20 a month, the 20 ward-maids from \$16 to \$20 a month.

In the laundry the supervisor will receive an increase from \$1,080 to \$1,140 a year; the salary of the head laundress has been increased from \$1,050 to \$1,150 a year; the general work receives an increase from \$7 to \$9 a week, and the shaker and elevator man is increased from \$7 to \$9 a week.

The woman employed as head sorter receives an increase in pay from \$25 to \$30 a month, the assistant laundress from \$35 to \$40 a month, 16 body laundry ironers from \$22 to \$30 a month, six fancy ironers from \$22 to \$30 a month, two fancy ironers from \$25 to \$30 a month, three all-around hands from \$25 to \$30 a month, eight mangle workers from \$22 to \$30 a month, and four shakers from \$20 to \$30 a month.

The salary of the superintendent of nurses is increased from \$1,200 to \$1,500 a year, the first assistant superintendent of nurses from \$728 to \$840 a year, the second assistant superintendent of nurses from \$600 to \$720 a year, the night superintendent from \$660 to \$720 a year, the teacher of the probation nurses from \$600 to \$720 a year, the assistant matron from \$600 to \$720 a year, the sterilizing room nurse from \$540 to \$600 a year, and the three graduate nurses on the floor from \$540 to \$600 a year.

The six graduate nurses in Wards A, K, L, E, S, and H receive an increased compensation from \$540 to \$600 a year; the five first-year nurses from \$420 to \$480 a year; five head nurses in second year from \$480 to \$540 a year; six third-year nurses from \$540 to \$600 a year.

In the south department the assistant superintendent of nurses receives an added compensation from \$800 to \$840 a year; the day superintendent of nurses from \$600 to \$720 a year; five head nurses from \$480 to \$540 a year; the night superintendent of nurses from \$600 to \$660 a year.

At the Haymarket Square Relief Station the matron receives an added salary from \$720 to \$780 a year; the graduate nurse from \$540 to \$600 a year.

At the East Boston Relief Station the matron receives an increase from \$600 to \$660 a year.

At the Convalescent Home the matron receives an increase from \$720 to \$780 a year; the head nurse receives an increase from \$540 to \$600 a year.

At the City Hospital, in the south department, the ward supervisor receives an increase from \$540 to \$600 a year, and the graduate orderlies, some 30 in number, receive an increase from \$420 to \$540 a year. The laundryman receives an increase from \$50 to \$55 a month.

In the hospital proper the messenger is increased from \$10 to \$12 a week; the center orderly from \$25 to \$30 a month

At the entrance office the first, second, third, and fourth assistants are increased from \$25 to \$30 a month. The night orderly of the out-patient department is increased from \$35 to \$50 a month.

In the south department the night lodge orderly is increased from \$25 to \$30 a month.

In the hospital proper the secretary is increased from \$18 to \$19 a week; the head bookkeeper from \$17 to \$18 a week; the copyist from \$15 to \$16 a week; the second copyist from \$11 to \$12 a week; the third copyist from \$11 to \$12 a week; the fourth copyist from \$10 to \$12 a week; the fifth copyist from \$10 to \$11 a week.

The head clerk receives an increase from \$14 to \$16 a week; the first and second copyists under the clerk, from \$10 to \$12 to \$14 a week; in the pathological laboratory, the stenographer receives an increase from \$12 to \$14 a week; the pathologic director from \$75 a month to \$1,000 a year.

In the x-ray department the assistant photographer receives an increase from \$15 to \$16 a week.

In the hospital proper the electrician receives an increase from \$20 to \$22 a week; the electrician's helper from \$20 to \$25 a month; the plumber's helper from \$15 to \$25 a month; the gardener from \$9 to \$12 a week.

In the south department the head cook receives an increase from \$60 to \$65 a month; the baker from \$55 to \$60 a month; the jobber from \$35 to \$40 a month.

In the executive assistant's division, hospital proper, the two physicians receive an increase as follows: first assistant from \$1,500 to \$1,600° a year; second assistant from \$1,200 to \$1,300 a year.

THE POOR WELL-TO-DO.

American Surgeon Finds English Hospitals for the Poor Only—Wealthy Compelled to Go to Inadequate Nursing Homes.

England's lack of hospitals for people in moderate circumstances is the thing that most impressed the members of the Clinical Congress of Surgeons of North America at the recent meeting in London, according to Dr. Franklin H. Martin, of Chicago, as quoted by the Chicago Post. All of London's wonderful hospitals where the visitors went to watch the operations by the great British surgeons are charity hospitals. People who can afford to pay are barred, and must either go to the inadequately equipped nursing homes or be operated on in their residences.

"This method of conducting hospitals amazes us from North America," said Dr. Martin. "Palatial buildings, occupying acres of the most valuable land in the capital of the world are devoted solely to nonpaying patients, excluding from their advantages the patient of moderate means and made prohibitive to patients of wealth.

"This works injustice both ways. With their large endowments, these hospitals can afford the most elaborate equipment of operating rooms and laboratory diagnostic facilities. Yet patients of means are compelled to go to the imperfectly equipped private hospitals or to nursing homes, with their makeshift arrangements. This must in turn have a pauperizing effect on people of small means who enter the hospitals as charity patients when they would gladly pay a small sum.

"The injustice worked on the paying patients may be serious, as nursing and private homes cannot afford expensive apparatus such as the latest x-ray machines and the like."

Dr. Martin has only praise for the British surgeons. He believes them to be fundamentally better equipped for their profession than the American. By this he means preliminary training and the necessity of each English surgeon being a fellow of the Royal College of Surgeons, which standardizes requirements.

"The average English surgeon is more deliberate in the technical performance of his work than the average American or Frenchman," Dr. Martin declared.

HOSPITAL SERVICE ON THE BATTLE FIELD.

Conditions of Modern Warfare Lessen Chances of Seriously Wounded.

Dr. Joseph Colt Bloodgood, of Johns Hopkins Hospital, an authority on the care of the wounded in war, was recently quoted on the subject by the Baltimore News as follows:

"In modern war surgery the wounded are divided into approximately two classes—60 percent that are slightly wounded, and the other 40 percent whose injuries are serious. Recent methods have made it possible to save a great majority of the larger class, but unfortunately the other 40 percent have chances of survival that become less and less

and less.

"The first-aid-to-the-wounded dressings now carried by all troops and the field hospitals, that can treat the slightly wounded at once, make it possible to prevent the dreaded infection of wounds, which used to be the principal cause of death. So that the slightly wounded nowadays recover to a very large proportion, and many of them are back in the ranks fighting inside a few days with wounds that

formerly would have been mortal.

"Automobile ambulances and new kinds of stretchers, without poles or with poles that are light and join together like a fishing rod, have helped in getting the badly wounded to the field hospitals, but even in the best field hospitals the chances of badly wounded soldiers are slight; they must be transported back to the permanent hospitals to get any real chance of surviving. So that the saving of the seriously wounded soldier today, like most other army problems, resolves itself into a question of transportation. And on this problem European director surgeons have spent much thought and money. The getting of the ablebodied soldier to the front must be conceded to be the most important factor, so that the carrying back of the wounded has been made a secondary consideration. "Nevertheless much has been done. Trains that have

"Nevertheless much has been done. Trains that have brought fresh troops can now be changed by a special wire-bedding spread above the seats into hospital trains. Automobiles are being used extensively in taking the badly hurt men far from the battle field to permanent hos-

pital centers.

"I recently looked over the hospital ship Sudan, an old transport refitted at the Alberta docks in London. She has wire-mesh cots everywhere, with specially designed feeding trays that can be swung over the sick soldiers. A number of such hospital ships will be of the utmost service in carrying wounded British soldiers back to England.

"The modern rifle is a humane instrument, inasmuch as many bullets nowadays go through the abdomen, arms, legs, and the larger bones, and even the back of the brain,

and heal up quickly.

"The greatest thing now desired by modern war surgeons is some way of reducing the horrible effects of the deadly shrapnel, and all war surgeons desire the abolishment of the use of shrapnel, as has been done with explosive bullets."

Dr. Bloodgood made an address on war surgery before the Clinical Congress in London the day preceding Germany's declaration of war on Russia.

A Motor Hospital.

In the Scientific American Supplement, September 19, Walter Bannard furnishes an illustrated article on this latest military vehicle of the French army, an automobile operating room in which surgical operations can be performed at the battle front. The new vehicle, with a 40-horse-power motor capable of developing an average speed of twenty miles per hour, is furnished with all the accessories and the latest improvements of a hospital operating room. Its operating room, being the principal compartment, contains an improved operating table, and wash basin supplied with sterilized water. In front a smaller compartment contains a sterilizing apparatus and the electrical apparatus, which is operated by the motor, whether the vehicle is in motion or at rest. An ingenious arrangement enables the surgeon to locate the bullet ac-

curately by application of the roentgen rays. The operating room contains also a complete trepanning apparatus, operated by a special motor. It carries an apparatus for sterilizing water by ultra-violet rays. The water is drawn from brooks or ponds by an electric pump. A folding tent for the shelter of the patients is attached to each side of the vehicle. By the employment of automobile operating rooms of this sort, prompt operations in perfectly aseptic conditions can now be performed before removal of the patient from the field, a procedure that will probably greatly diminish the mortality in modern warfare.

Hospital Floors.

At a recent meeting of the American Hospital Association "the best flooring material for wards, corridors, administration buildings, and for operating rooms" became the subject of interesting discussion. E. F. Stevens, the Boston hospital architect, has tried nearly everything made. In some hospitals for corridors he used cork-tile, a material that will hardly ever wear out. Its resiliency recommends it as the best thing on the market. It is nonslipping, and has every advantage of a corridor floor. Linoleum, if properly laid, he considers the nearest approach to a perfect floor for wards and private rooms, if made a smooth layer and properly cemented to the base or under surface. There are various ways of treating the under surface. In northern Germany and Scandinavia hospital architects use an under surface called "steinholtz." which is a magnusite preparation of sawdust and magnusite, that gives some resiliency to the floor. In southern Germany the best architects cement the linoleum directly to the concrete base. For several years he has had best results in the use of linoleum, but does not recommend its use where there is moisture, as in sink rooms, toilet rooms, diet kitchens, and kitchens themselves. For such rooms he would suggest some simple material, depending on amount of appropriation. The brown, red, green, or any one color of linoleum is the best floor to use. In Germany the use of a variegated or jasper surface material, that breaks up surface appearance and conceals footprints, seems a commendable feature of the material.

The use of tile for toilets, diet kitchens, and sink rooms is preferable, if circumstances warrant the expense. If not, use terrazzo, which gives good wear and good appearance. For kitchens the red flint tile makes a splendid floor; for operating rooms, a gray flint tile, a material easy to clean, of good appearance, and is nonabsorbent. Magnusite floors are legion, and are known by different names, but are not satisfactory where there is much wear or moisture. The battleship or very thick linoleum is unnecessary in hospital use. Linoleum of half the thickness would probably wear thirty to fifty years in a hospital, and could be replaced at a cost of 30 percent less than ¼-inch battleship linoleum. The discussion revealed that terrazzo floors for corridors had proved very satisfactory.

The call of Dr. Joseph A. Blake, the surgeon in charge of the American hospital corps attending wounded soldiers in Paris hospitals, was answered by seven young surgeons, who sailed on the White Star liner Olympic September 26 for Liverpool. Dr. Blake's appeal was for six surgeons to live and work in American hospitals during the continuance of the war. Those who responded were Dr. A. H. Dugdale, of Omaha, Neb.; Dr. Mercer Blanchard, of Columbus, Ga.; and Drs. Corry, J. P. Hoquet, Benjamin Joblons, and Lester Rogers, of New York. The seventh volunteer, who will remain but six weeks, is Dr. Richard Derby, whose wife was Miss Ethel Roosevelt.